See back cover for new features of v7.6W

INSTALLATION MANUAL

Digital Security Controls

PC3000

Version 7.6W

This device complies with Parts 15 and 68 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Reg. No.: F534J3-10411-AL-E
REN = 0.0B Plug Type : RJ31X

MADE IN CANADA

NOTES ON UL INSTALLATION

This equipment is UL listed in accordance with standard UL1023 (Household Burglar - Alarm System Units), standard UL985 (Household Fire Warning Units) and UL1635 (Digital Alarm Communicator System Units).

This equipment has the capability of being programmed for operational features that are not allowed for UL recognized installations. To stay within the standard for household applications, the installer should use the following guidelines when configuring the system.

1. ALL components of the system should be UL listed for the intended application. Note elsewhere in this manual, recommendations for smoke detectors and battery to be used with this equipment.

2. If this system is configured for "Fire", the installer should refer to NFPA Standards #74 for details on locating smoke detectors. When the "Fire" feature is enabled, there must be at least one UL recognized indoor Fire Alarm Warning Signalling Appliance.

3. Maximum allowed entry time = 45 seconds
   Maximum allowed exit time = 60 seconds
   Minimum allowed bell cutoff time = 4 minutes

4. The "Split Arming" feature is not allowed for UL recognized installations. The equipment must be configured as a single system.

5. User bypass must be enabled so that a user code is required to bypass zones.

6. The installer should caution the user to NOT give system information to casual users. E.g.. Codes, bypass methods, etc. to baby-sitters or home service people. Only the "One-Time" use code should be given to the casual user.

7. The installer should advise the user and note in the user manual:
   - Service organization name and telephone number
   - The programmed exit time
   - The programmed entry time

8. Remote programming must be disabled.

TABLE OF CONTENTS

Page

Specifications ____ 1

Features ____ 2

Long Range Radio Operation ____ 3

Mode 1: Radio-Only Operation ____ 3
Mode 2: Radio with Land Line Communication ____ 3

Installation ____ 4

Bench Testing ____ 4
Mounting Panel ____ 4
Hook-up Procedure ____ 4
Terminal Connections ____ 5

Guidelines for Smoke Detector Location ____ 7

Keypad Functions ____ 8

Introduction ____ 8
Master Code ____ 8
Installer's Programming Code ____ 8
Arming ____ 8
Disarming ____ 8
Auto-Bypass/Home-Away Arming ____ 8
Zone Bypassing ____ [Q]+[1] or [Q]+[1]+[Access Code] ____ 8
Trouble Display ____ [Q]+[2] ____ 9
Alarm Memory Display ____ [Q]+[3] ____ 9
Switched Auxiliary Supply Control ____ [Q]+[Hold Down 4] ____ 9
User's Programming Commands ____ [Q]+[5]+[Master Code] ____ 10
User's Functions Command ____ [Q]+[6]+[Master Code] ____ 10
Installer's Test ____ [Q]+[6]+[Master Code]+[0] ____ 11
Setting the Clock ____ [Q]+[6]+[Master Code]+[1] ____ 11
Auto-arm Time of Day ____ [Q]+[6]+[Master Code]+[2] ____ 11
Quick Arm ____ [Q]+[6]+[Master Code]+[4] ____ 11
Auto-arm Enable ____ [Q]+[6]+[Master Code]+[5] ____ 11
Door Chime ____ [Q]+[6]+[Master Code]+[6] ____ 11
System Test ____ [Q]+[6]+[Master Code]+[8] ____ 11
User Callup ____ [Q]+[6]+[Master Code]+[9] ____ 11
Installer's Programming Commands ____ [Q]+[8]+[Installer's Code] ____ 12
"At Home" Arming ____ [Q]+[9]+[Access Code] ____ 12
"Quick Arm" Command ____ [Q]+[0] ____ 12
Quick Exit ____ [Q]+[0] when armed ____ 12
Keypad Zones ____ 12

Downloading ____ 13

Programming Guide ____ 14

Introduction ____ 14
Reviewing Programmed Data ____ 14
[00] Binary Programming ____ 14
[01] 1st Phone Number ____ 14

[02] 1st Account Code ____ 15
[03] 2nd Phone Number ____ 15
[04] 2nd Account Code ____ 15
Reporting Codes Explanation ____ 15
[05] Alarm Reporting Codes Zones 1 to 8 ____ 15
[06] Alarm Reporting Codes Zones 9 to 16 ____ 15
[07] Restoral Reporting Codes Zones 1 to 8 ____ 15
[08] Restoral Reporting Codes Zones 9 to 16 ____ 16
[09] Utility Alarm Reporting Codes ____ 16
[10] Utility Restoral Reporting Codes ____ 16
[11] Reporting Codes for Closing (Arming) via Access Codes 1 to 8 ____ 16
[12] Reporting Codes for Closing (Arming) via Access Codes 9 to 16 ____ 16
[13] Reporting Codes for Opening (Disarming) via Access Codes 1 to 8 ____ 16
[14] Reporting Codes for Opening (Disarming) via Access Codes 9 to 16 ____ 16
[15] Reporting Codes for Miscellaneous Functions ____ 17
[16] Zone Definitions for Zones 1 to 8 ____ 17
[17] Zone Definitions for Zones 9 to 16 ____ 18
[18] 1st System Option Code ____ 18
[19] 2nd System Option Code ____ 18
[20] Zones 1 to 8 Bypass Mask ____ 18
[21] Zones 9 to 16 Bypass Mask ____ 18
[22] System Times ____ 19
[23] System Clock Times ____ 19
[24] New Installer's Code ____ 19
[25] New Master Code (Access Code Number 1) ____ 19
[26] Downloading Access Code ____ 19
[27] Communicator Format Options ____ 19
[28] Programmable Input Options ____ 20
[29] [30] [31] [32] Split Arming ____ 21
[33] Call Direction Options ____ 21
[34] Software Reset EEPROM Memory to Factory Defaults ____ 21
[35] Through [42] Reserved for Future Use ____ 22
[43] Access Bypass Mask (Codes 1 to 8) ____ 22
[44] Access Bypass Mask (Codes 9 to 16) ____ 22
[45] Miscellaneous Function Reporting Codes ____ 22
[46] Downloading Computer Telephone Number ____ 22
[47] Modem Configuration ____ 22
[48] Panel Identification Code ____ 22
[49] Periodic Function Enable/Disable ____ 22
[51] 3rd System Option Code ____ 22
[52] Delay Before Transmission ____ 23
[53] Long Range Radio Account Code ____ 23
[54] Long Range Radio Installer's Test Mode ____ 23
[90] Installer's Lockout Enable ____ 23
[91] Installer's Lockout Disable ____ 23

Just for the Record ____ 24

Programming Work Sheets ____ 25

Hookup Diagrams ____ 36

Limited Warranty ____ 38

SPECIFICATIONS

Control Panel Specifications

21 zones including:

- 16 fully programmable supervised zones (EOL resistors)
- Supervised fire zone
- 1 auxiliary normally open zone
- 3 keypad activated zones

Audible alarm output:

- Bell output
  700 mA, fused at 5 Amps, 11 VDC unregulated
- Steady or pulsed output

EEPROM memory:

- Does not lose codes or system status on complete AC and battery failure

Powerful 1.5 amp regulated power supply:

- 400 mA auxiliary supply, 11 VDC unregulated
- Separately fused for battery, keypad/auxiliary supply and bell output
- Supervision for loss of AC power, low battery
- Internal clock locked to AC power frequency

Switched Smoke Detector Supply Output:

- Controlled from keypad [Q][4] command

Battery required:

- 12 volt 4 Ah minimum rechargeable gel-cell or sealed lead-acid battery

Transformer required:

- 16.5 VAC, 40VA

Dimensions:

- 11" x 11.8" x 3.3" deep (279 x 300 x 84 mm)

Weight:

- 6.5 lbs (3 kg)

Remote Keypad Specifications (PC3000RK)

- Four wire (QUAD) hook-up and up to 3 keypads per system
- Built-in piezoelectric buzzer
- Full annunciation of zones and system status
- Nominal current draw 60 mA
- Dimensions 5.5" x 4.5" x 1" deep (140 x 114 x 25 mm)

Output Voltage Specification

Due to the requirements of standards UL985 and UL1023, it is required to indicate an output voltage of 11VDC unregulated.

Typically, with normal AC in and a fully charged battery, the output voltage will be 13.8 VDC. With AC off and a discharged battery, the voltage will go to 10 volts. Devices that require power from the control panel should be capable of normal operation over the voltage range of 10 to 14 VDC.

Digital Communicator Specifications

- 92 reporting codes
- Transmits all 10BPS and 20BPS single line and extended formats
- Radionics Rounds and Radionics Parity formats
- Sescoa Super fast format
- 3/1, 4/1, 4/2 and hexadecimal numbers
- DTMF and Pulse dialing
- DPDT line seizure
- True dial tone detection
- Anti-jam feature
- Two telephone numbers and two account codes
- Split reporting of selected transmissions to each telephone number

FEATURES

Keypad Programming

The PC3000 comes with a default program so it is operational with a minimum of programming. It is completely programmable from the keypad. The panel uses EEPROM memory so that all information is retained even if the panel loses both AC and battery power.

Multiple Level Static/Lightning Protection

The PC3000 has been carefully designed and tested to provide reliable service. It is built to take static and lightning induced surges and keep on working. Multiple level surge filters are on all zone inputs, the power supply, the keypad connections, the bell output, the auxiliary power supply and the telephone interface. A special "ZAP-TRAC" circuit board configuration catches high voltage impulses right at the wiring terminals. Protective ground planes surround sensitive areas preventing the spread of damaging voltage surges. Metal Oxide Varistors (MOV's) are placed in all the critical areas to further reduce impulses to safe levels.

"WATCHDOG MONITOR" Circuit

Even when all precautions are taken so that voltage surges do not cause damage to the control panel, it is possible to cause temporary disruption to the operation of the microprocessor causing it to lose track of the program sequence. The PC3000 is equipped with an external "Watchdog Monitor" circuit which continually checks the microprocessor program execution.

System Supervision Features

The PC3000 continuously monitors a number of possible trouble conditions including:

- An active battery supervision circuit that periodically tests the battery under load.
- A loss of the AC power supply.
- A supervised fire circuit trouble condition.
- A telephone line monitoring circuit.
- A bell circuit failure indicates open circuit or fuse failure.
- A test code feature which transmits a communicator test code to the monitoring station at a selected time everyday. The test code can be sent at intervals from 1 to 99 days.
- A bell/siren/communicator test feature which can be activated from the keypad.
- TLM (Telephone Line Monitoring) restoral transmission.

Advanced Features

The PC3000 has many advanced features. Features which provide the security system design flexibility and selling advantage necessary to win those demanding jobs and make them profitable.

Some of these features include:

- EEPROM memory retains all data even on complete AC and battery failure. Panel powers up in last armed or disarmed state before power loss.
- All programmable zones may be selected as one of 11 different types including; delay, double delay, quadruple delay, instant, interior, interior with home-away, delay with home-away, and 4 types of 24 hour emergency and supervisory circuits.
- Keypad programming of up to sixteen security codes.
- Zone bypassing from the keypad.
- Individual zone and system function indicators on keypad.

Although the PC3000 has many features, it is not difficult to use. All keypad commands are similar and are assisted by audible and visual cues.

LONG RANGE RADIO OPERATION

The PC3000 LRR Long Range Radio system features two modes of operation:

Mode 1: Radio-Only Operation

When programmed for Mode 1 operation, events programmed to report to the First Telephone Number (see "Call Direction Options" section [33]) will only be transmitted through the LINKS2000 Long Range Radio connection.

When a LINKS2000 Long Range Radio transmission is to be made, the LINKS2000 will be activated and three transmissions will be made. There will be a 3-second delay between each transmission. If additional events occur during the transmission, additional transmissions will be made to ensure that the last event is transmitted twice.

Mode 2: Radio with Land Line Communication

When programmed for Mode 2 operation, events to be reported to the First Telephone Number will be communicated through both the LINKS2000 and the normal land line.

When an event is to be reported to the First Telephone Number, the LINKS2000 will be activated and a transmission will be made. Following the LINKS2000 transmission, the control panel will call the land line number (programmed in section [01]) and report the event again. If the land line communication is successful, the control panel will hang up the line and no further communication will take place.

If additional events occur during the land line communication, the additional events will be reported over the land line. After completing the land line call, the panel will hang up and no further action is taken.

In either mode of operation, events programmed to report to the Second Telephone Number are not communicated through the LINKS2000 connection. This allows the system to be programmed so that non-alarm events may be reported over the land line without the use of the long range radio connection.

Refer to Programming Section [19] 2nd System Option Code, Zone Light 4, for instructions on selecting the LINKS2000 operating mode.

Note: If all reports are to be communicated through the LINKS2000 and no phone line is connected to the system, turn ON Zone Light 7 in section [19] to prevent TLM troubles from being generated.

INSTALLATION

Bench Testing

The PC3000 contains a factory default program. Any additional programming required can be done through the keypad. For many applications all that will be required is to enter the telephone number and alarm codes with keypad entries that are as straight forward as dialing a telephone number. If you need help talk to your DSC equipment distributor.

Connect 1K ohm 1/2 watt end of line resistors from each zone (Z1 to Z16) input to the closest common "COM" terminal. Connect an end of line resistor between the "Fire" input terminal and the "COM" terminal between "Z1" and "Z2". Unless all zone loops are properly terminated with end of line resistors the "Ready" light will not be on and the panel will not arm unless the "Ready" light is on.

Connect the 4 keypad wires to the control panel as shown in the connection drawing.

For complete testing of the PC3000 LRR system, it is suggested that both LINKS2000 and land line communications be thoroughly tested. To test LINKS2000 communications, consult with the monitoring station to determine their test procedures. To test land line communications, connect the PC3000 to a digital receiver through a telephone line connection or to a digital communicator test set such as the DSC DTS-1.

The DSC DTS-1 digital communicator test set is an inexpensive unit which can simulate the telephone system dial tone and the receiver hand shake and kiss-off tones as well as display the data sent out by a digital communicator. Also, the DTS-1 has a "listen-in" feature which makes it ideal for monitoring the transmission between communicator and receiver when the PC3000 is connected to the telephone line.

If you are using a DTS-1, connect the green and red telephone clips to the "TIP" and "RING" terminals and connect the red and black power clips to the "AUX [+]" and "AUX [-]" terminals on the PC3000. When power is applied to the panel press the red local-line button on the DTS-1 and observe the display window area. The "local-line" indicator should be in the local position.

For testing purposes, so that the sound level is not too loud, connect a small buzzer to the "BELL [+]" and "BELL [-]" terminals to indicate when the panel is in alarm.

Connect a 16.5 VAC, 40 VA transformer to the "AC" terminals. Before plugging in the transformer be sure the circuit board is not resting on anything metallic which may cause a short.

Note: THE PC3000 WILL NOT START UP IF "AC" IS OFF AND THE BATTERY IS LOW.

When the transformer is plugged in there should be lights on the keypad and the buzzer connected to the bell terminals may go on for a few seconds. The "Armed" light may be on or off the first time the panel is powered. The last armed/disarmed condition is stored in the EEPROM memory so the panel will always power up in the last armed/ disarmed state. If the "Armed" light is on, enter the default Master Code [1234] to disarm the panel. If the keypad is not active, check for the presence of AC power at the "AC" terminals, check the keypad connections and check the panel fuses.

If all the zones are properly connected with end of line resistors all of the zone lights will be off. Note that the panel will arm only if all zones are properly connected with end of line resistors (including FIRE circuit) so that the "Ready" light is on. The keypad should beep several times to indicate acceptance of the master code. Enter the Master Code to arm or disarm the panel.

Read the "Keypad Commands" section of this manual or the Instruction Manual and enter commands on the keypad to become familiar with the different commands.

Turn to the "Programming Guide" in this manual and enter a sample program into the panel through the keypad to become familiar with the programming commands.

Mounting Panel

Select a dry location close to an unswitched AC source, a ground connection and the telephone connection.

Remove printed circuit board, mounting hardware and keypad from cardboard retainer inside panel. Before attaching cabinet to wall, press the five white nylon printed circuit board mounting studs and the ground connection screw into cabinet from the back.

Pull all cables into cabinet and prepare them for connection before mounting the circuit board to the back of the cabinet. Press circuit board down onto mounting studs.

Hook-up Procedure

DO NOT connect transformer or battery until all other wiring has been connected. See power-up procedure.

Connect a ground cable from the cabinet ground connection by the shortest and most direct route to a grounding rod.

Connect zone cables to zone loop inputs and put end of line resistors on any unused zones. Connect wires supplying power for motion detectors to auxiliary supply.

Install keypads and connect wires to keypad terminals on panel. Connect RJ31-X cord to telephone terminals. Do not insert plug into RJ31-X jack.

Ensure that plugs and jacks meet the dimension, tolerance and metallic plating requirements of 47 C. F. R. Part 68, Subpart F.

WARNING: FCC restricts using this equipment on certain types of telephone lines. Read FCC Compliance Statement at the end of this manual. Also, do not use this equipment on a telephone line equipped with 'call holding" feature because the tone generated may interfere with the communicator operation.

Connect bell or siren to "BELL [+]" and "BELL [-]" terminals. Observe correct polarity for sirens and polarized bells. Connect 1K ohm 1/2 watt resistor across terminals to eliminate trouble condition if bell circuit is not being used.

Terminal Connections

"AC" Power Terminals

Use a 16.5 VAC transformer with a minimum 40 VA rating to supply AC power to the PC3000. The transformer should not be connected to an outlet that is controlled by a switch. If AC failure occurs it is displayed as a trouble on the keypad (see "Keypad Functions [Q][2] Trouble Conditions"). It can also be transmitted to the monitoring station as a trouble condition (see "Programming Guide [Q][8]" sections [09] and [10] for alarm and restore codes and section [22] for AC transmission delay).

Auxiliary Power Terminals "AUX" and "GND"

The auxiliary power supply can be used to power motion detectors and other devices requiring 11 VDC. 400 mA 11 VDC is available from the "AUX" (positive) and "GND" (negative) terminals when the PC3000 is used with one keypad. For each additional keypad the auxiliary supply rating must be reduced by 60 mA. The auxiliary supply is fused with the keypad supply at 1 amp. Auxiliary fuse failure transmission can be sent (see [Q][8] sections [09] and [10]).

Switched Auxiliary Power Terminals "SW AUX" and "GND"

The switched auxiliary supply can be switched off momentarily from the keypad (see "Keypad Commands [Q][4]"). The "SW AUX" terminal is positive and the "GND" terminal negative. The 400 mA auxiliary supply rating must be reduced by any current taken from the switched auxiliary supply. The switched supply shares the same fuse as the auxiliary supply.

Bell/Siren Terminals "BELL [+]" and "BELL [-]"

These terminals are for powering bells or other devices requiring a steady output voltage on alarm. The bell output is fused for 5 amps. When connecting sirens (speakers with siren driver already built-in), be sure to observe the correct polarity. Connect the positive lead to the "BELL [+]" terminal and the negative lead to the "BELL [-]" terminal.

If no siren or bell is used, connect a 1000 ohm resistor between "BELL [+]" to "BELL [-]". The bell/siren alarm output is pulsed (1 second on 1 second off) when an alarm is created by the [F] keypad zone, by the FIRE zone, or when the Bell Pulse option is enabled in section [19] light 1.

Note: During each LINKS2000 transmission the bell will be turned off for approximately 1 second.

Keypad Terminals "RED", "BLK", "YEL" and "GRN"

Connect the four coloured wires from the keypads to these terminals. When connecting more than one keypad, connect in parallel across the keypad terminals at the control panel (i.e. all reds wires together, all blacks together, all yellows together and all greens together). The keypad red and black power supply terminals are fused through the auxiliary fuse.

Programmable Output Terminal "PGM OUT"

Connect the PC3000 PGM OUT terminal to the "PGM" terminal on the LINKS2000. When the LINKS2000 unit is used with the PC3000, the PGM output may not be used for any function other than the LINKS2000.

Auxiliary Input Terminal "AUX IN" (also KEY ARMING)

The "AUX IN" input terminal is a normally open 24 hour zone. It can be programmed from the keypad to be silent or audible. There is no display on the keypad for the "AUX IN" input. An alarm on this input is created by applying a positive voltage or by closing a contact between the "AUX IN" terminal and the positive auxiliary supply. See "Programming Guide [Q] [8]" sections [09] and [10] for programming the alarm and restoral codes.

The "AUX IN" terminal can also be used as a momentary key arming/disarming input. See "Programming Guide" section [28] for a list of options for the "AUX IN" terminal.

Note: The keyswitch arming feature must be implemented using a UL listed device.

"FIRE" Zone Input

The "FIRE" zone is a supervised (normally open alarm initiating contact) end-of-line resistor circuit designed to accept "Latching" four-wire smoke detectors. (See "Fire Circuit Installation Diagram".)

On alarm, (fire zone shorted) the bell output will pulse the signal to indicate that the fire zone has been activated. Alarm memory and transmission by the digital communicator is delayed 30 seconds. If the alarm is acknowledged, by pressing the [#] key before the 30 second delay has expired the signals will silence and the transmission will be aborted. If the alarm is not acknowledged and the 30 second delay expires, the fire memory latches and the transmission cannot be aborted.

If the smoke detector is not restored to normal after the signal has silenced, the signal will resound after 90 seconds. And 30 seconds after that, the communicator will transmit. If the signals resound, they may again be silenced, [#] key, and the communicator will be aborted if silence occurs within the 30 second delay period.

To restore the smoke detector to normal, clear all products of combustion from the detector and reset the detector by pressing [Q] and then holding down [4] for 2 or 3 seconds. This action will remove power from the smoke detector and if it is clear of smoke, the detector will return to normal. If the detector is still in alarm, the signals will sound immediately and the above sequence will repeat.

For an open on the FIRE zone, the keypad sounder will beep twice every 10 seconds and the "Trouble" light will show on the keypad. The communicator will transmit the trouble condition if programmed for trouble transmission. The audible "Trouble" signal may be silenced by pressing the [#] key. To determine the nature of the trouble, press [Q][2]. (see the "Trouble Display" section.)

Zone Input Terminals "Z1" to "Z16"

Zone inputs "Z1" to "Z16" are supervised end of line (E.O.L.) resistor circuits. Each input must be terminated with a 1K ohm E.O.L. resistor. An alarm condition will be created if a normally open contact is used to short across the E.O.L. resistor. An alarm is also created if normally closed contacts, wired in series with the E.O.L. resistor, are opened. See the wiring diagram for normally open and normally closed contact connection. The type of circuit or zone definition

(delay, instant, 24 hour etc.) is programmed from the keypad using the [Q][8] Installer's Programming commands ("Programming Guide" sections [16] and [17]).

NOTE: For UL installations, zone inputs must be terminated with normally closed initiating devices or end-of-line resistors (1K ohm).

Telephone Terminals "TIP", "RNG", "T-1" and "R-1"
The wires from the RJ31-X telephone jack are connected to these terminals in the following way.

TIP RNG	Green wire Red wire	▶	Incoming line from telephone company
T-1 R-1	Brown wire Grey wire	▶	Outgoing line to house telephone(s)

Note: For proper operation there must be no other telephone equipment connected between the control panel and the telephone company's facilities.

Do not connect the alarm panel communicator to telephone lines intended for use with facsimile (FAX) machines. These lines may incorporate a voice filter which disconnects the line if other than FAX signals are detected, resulting in incomplete transmissions.

Ensure that plugs and jacks meet the dimension, tolerance and metallic plating requirements of 47 C. F. R. Part 68, Subpart F.

Battery Connections
Do not connect the battery or the transformer until the wiring is complete. Connect the red battery lead to the positive battery terminal and the black lead to the negative battery terminal. If the connection is made in the reverse the battery fuse will fail. If the battery charging voltage is out of adjustment, contact your service representative.
Note: The battery charging voltage must not be adjusted on UL Listed systems.

Keypad Installation
Mount the keypads near the exit-entry doors. The PC3000RK keypad has a red, a black, a green and a yellow wire on the back. Connect these four wires to the four keypad terminals on the control panel using four conductor (quad) telephone wire. Up to three keypads may be connected to one PC3000. Connect all green wires from the keypads to the "GRN" terminal on the panel. Connect all yellow wires from the keypads to the "YEL" terminal on the panel. Connect all red wires from the keypads to the "RED" terminal. Connect all black wires from the keypads to the "BLK" terminal.

Power-up Procedure
If the keypads are located a distance from the panel, install an extra keypad temporarily at the panel during power up testing. An extra keypad with a short length of cable and alligator clips attached is helpful for testing and programming PC3000 systems.

Connect the transformer, wait approx. 5 seconds.

Enter a few keypad commands and open a zone to be sure that the panel and keypad are responding to signals. If the keypad does not respond and there are no indicators on, check for AC voltage at the "AC" terminals. If there is 16 VAC present, check that the keypad wiring is correct and check the keypad/auxiliary supply fuse. If the keypad/auxiliary supply fuse is blown check for a short between the keypad red and black wires before replacing the fuse.

If the keypad is responding normally, connect the battery. The red battery lead attaches to the positive battery post and the black battery lead attaches to the negative battery post.

Note : THE PC3000 WILL NOT START UP IF 'AC' IS OFF AND THE BATTERY IS LOW.

Testing The System
It is recommended that both land line and LINKS2000 communications be thoroughly tested when installation is completed. To test both communication systems, program the control panel for Mode 2 operation so that communications will be made over both the land line and the LINKS2000.

Connect the LINKS2000 and plug the telephone cord in the RJ31-X jack. If desired, a DTS-1 may be used to monitor the land line communications; connect the DST-1 as described in the "Bench Testing" section of this manual. Place the DTS-1 into "line" mode to monitor the land line communications.

Perform an Installer's Test by entering [Q][6][Master Code][0]; refer to the "Keypad Functions" section of this manual for instructions on using the Installer's Test command.

The system may also be tested by arming the system and then activating instant zones after the Exit Delay has expired. After a zone has been activated, wait for all communication to be completed and then disarm the system. Check with the monitoring station to ensure that both the land line and LINKS2000 communications were completed successfully. Perform additional transmissions as required by the monitoring station.

Check the "Trouble" light on the keypad. If it is on, press [Q] then [2] to determine if there is a system trouble. The "Trouble Display" section in "Keypad Commands" gives a description of the different trouble conditions.

Instructing End-User
Fill out the system reference guide in the PC3000 Instruction Manual. Check off sections in the manual which apply to the user's system and make additional notes if necessary.

Describe the system to an authorized user. Describe arming and disarming procedures. Describe the basic keypad functions. Assist the user in working through examples of each type of command.

Provide user with the Instruction Manual and instruct them to read the manual to become familiar with the system operation.

Instruct the user to test the system on a regular basis as described in the Instruction Manual. The Master Code should be changed from the default setting and recorded in the Instruction Manual.

GUIDELINES FOR SMOKE DETECTOR LOCATION

Experience has shown that all hostile fires in family living units generate smoke to a greater or lesser extent. Experiments using typical fires in family living units indicate that detectable quantities of smoke precede detectable levels of heat in most cases. For these reasons, NFPA standard 74 requires smoke detectors should be installed outside of each sleeping area and on each additional story of the family unit.

The following information is for general guidance only and it is recommended that the smoke detector manufacturer's literature be used for detailed installation instructions.

It is recommended that additional smoke detectors beyond those required be installed for increased protection. The added areas include: basement, bedrooms, dining rooms, furnace room, utility room and hallways not protected by the required detectors.

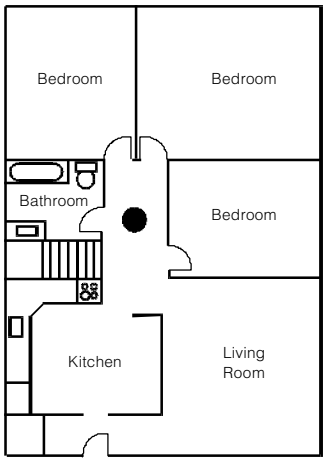


FIG. 1: ***A smoke detector should be located between the sleeping area and the rest of the family unit.***

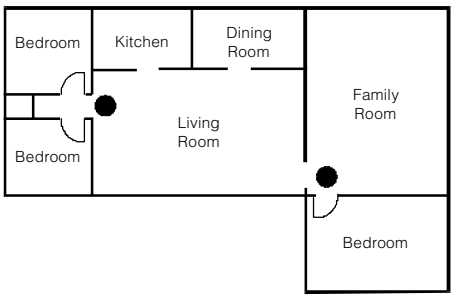


FIG. 2: ***In the family living units with more than one sleeping area, a smoke detector should be located to protect each sleeping area.***

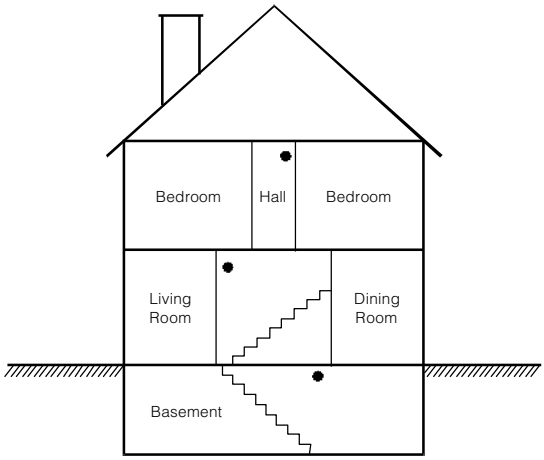


FIG. 3: ***A smoke detector should be located on each story of the living unit.***

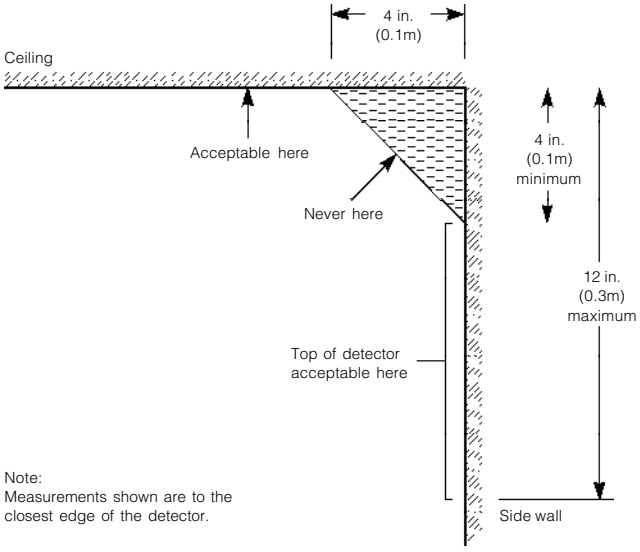


FIG. 4: ***Smoke Detector mounting - "Dead" Air Space. The smoke from a fire generally rises to the ceiling, spreads out across the ceiling surface and begins to bank down from the ceiling. The corner where the ceiling and wall meet is an air space into which the smoke may have difficulty penetrating. In most fires, this "dead" air space measures about 4 in. (0.1m) along the ceiling from the corner and about 4 in. (0.1m) down the wall as shown in Figure 4. Detectors should not be placed in the dead air space.***

KEYPAD FUNCTIONS

Introduction

The PC3000RK remote keypad provides complete information and control of the PC3000 control panel. The panel can be fully programmed from the keypad. The 16 zone lights and the fire alarm light provide alarm and status indication for the alarm circuits. The 6 function lights guide the user in operating the system. The built-in buzzer lets the user hear correct key entries and other alert signals. The 12-key keypad is used for code entry and other programming functions. All keypad entries are made by pressing one key at a time.

The keypad is normally resting in the arm-disarm mode. In this condition the zone lights are indicating the opening and closing of zones. The "Ready" light comes on when all zones are closed. The system can be directed to perform other functions such as zone bypassing, displaying trouble conditions, displaying alarm memory and programming by entering one of the various [Q] commands described below. Pressing the [#] key or not making any key entry for 2 minutes always returns the keypad to the arm-disarm mode.

Master Code

A default Master Security Code "1234" is programmed into the PC3000 at the factory. The Master Security Code is used for arming and disarming the control panel, for programming up to fifteen additional security codes using the [Q][5] command and for entering other user functions using the [Q][6] command. The Master Code can be reprogrammed if the installer leaves section [19] light 2 off. Because the PC3000 uses EEPROM memory the codes and other data are retained even after complete AC and battery failure.

Installer's Programming Code

A default Installer's Programming Code "3000" is programmed into the PC3000. This code is used with the [Q][8] command by the installer to gain access to the system in order to enter panel or communicator program information. The Installer's Programming Code may be changed by the installer.

Arming

Check to see if the "Trouble" or "Bypass" light is on before arming the PC3000. Close all protected doors and windows and stop movement in areas covered by motion detectors. Check to see that the "Ready" light is on (all zones are closed). The system cannot be armed unless the "Ready" light is on. Enter a [4 Digit Security Code]. As each digit is entered the keypad buzzer will beep. If the security code was entered incorrectly, the sounder will beep steadily for 2 seconds. If the code was entered correctly but the "Ready" light was not on, the keypad will beep quickly followed by a steady tone. When the correct code is entered, the "Armed" light will come on and the keypad buzzer will beep quickly. Exit the premises through the designated exit-entry door. At the end of the allowed exit time all lights on the keypad will go out except the "Armed" light. See the "Installer's Programming [Q][8] Command" section [22] for instructions on how to change the exit time. Also see, "Quick Arm" and "At Home Arming".

Disarming

Enter the premises through the designated exit-entry door. The keypad buzzer will be on. Go to the keypad and enter the [4 digit security code]. If an error is made in entering the code, press the [#] key and enter the code again. The "Armed" light will go out and the keypad sounder will stop. The correct security code must be entered before the allowed entry time expires. To change the entry time see "Installer's Programming Command", [Q][8]. If an alarm occurred while the panel was armed, the "Memory" light and the "Zone" light which caused the alarm will start to flash and stay flashing for 2 minutes when the panel is disarmed. Pressing the [#] key returns the panel to the normal arm-disarm mode.

Auto-bypass/Home-Away Arming

If a correct security code is entered, and you do not exit the premises, the system will, at the end of the Exit delay time, arm with interior zones automatically bypassed if those interior zones have been programmed as "Home-Away" zones. The "Bypass" light will come on immediately following the arming code being entered until a delay zone is tripped or [Q] [1] is entered to reactivate bypassed home-away zones. (See programming sections [16] and [17], zone definitions for programming zones as "Home-Away".)

This is a convenience feature for the user who wishes to remain at home with the system armed. The user does not have to manually bypass the home-away zones.

To reactivate the home-away zones that have been automatically bypassed, press [Q] [1]. The "Bypass" light will go out. This command is a quick method of fully arming the system before going to bed.

Zone Bypassing

A bypassed zone will not cause an alarm. If a zone is bypassed the panel may be armed ("Ready" light will be on) even if the zone is open. Use zone bypassing when access is needed to part of the protected area. Also, damaged wiring or contacts on a zone may be temporarily bypassed until repairs can be made so that the panel can be armed.

[Q]+[1]

To bypass zones, enter [Q] [1] and the zone number(s) to be bypassed. Press [#] to return to "Ready" (arm-disarm mode). When bypassing zones, two digits must be entered for the zone number(s) to be bypassed (e.g. [Q] [1] [01]....[16]). To remove all bypasses, enter [Q] [1] [00] [#]. The "Zone" lights which are on, while the "Bypass" light is flashing, indicate the bypassed zones. Remember that if no keypad entry is made for more than 2 minutes the keypad will return to the arm-disarm mode. Then, in order to bypass a zone the complete command must be re-entered. Once the bypass command is entered, pressing [99] recalls the last zone or group of zones which was bypassed. If the same group of zones is bypassed each time, this bypass recall feature can be used instead of having to bypass zones individually.

When the PC3000 is programmed, the ability to bypass certain zones may be eliminated. In this case, the "Zone" lights for those zones will not come on in response to the bypass command. See the "Zone Bypass Mask" instruction in the [Q][8] Installer's programming section. If the "Bypass" light is on when arming the panel, the [Q][1] command should be used to see which zones are bypassed so that zones are not unintentionally bypassed. Zone bypasses are automatically cancelled when the panel is disarmed.

[Q]+[1]+[Access Code]
If light 8 in section [19] is on then a code must be entered with [Q]+[1] to bypass zones. Only the zones assigned to the same side of the system as the user code can be bypassed. The ability to bypass using certain access codes can be eliminated. See the "Access Bypass Mask" instruction in the [Q] [8] Installer's Programming section.

Note: At no time can any armed zone be bypassed.

Trouble Display

[Q]+[2]
The PC3000 continuously monitors a number of possible trouble conditions. If one of these conditions occurs, the keypad "Trouble" indicator will light and the audible indication will sound (two short beeps every 10 seconds). When the [#] key is pressed the audible indication will stop but the "Trouble" indicator light will remain on until the trouble is cleared. Trouble conditions can also be transmitted to the monitoring station (see "Programming Guide" sections [09] and [10] for alarm and restoral trouble codes). Press the [Q] then [2] keys to display the type of trouble. The "Zone" lights indicate the type of trouble condition.

1 Low stand-by battery
2 AC power failure
3 Day zone trouble
4 Telephone line trouble
5 Uncessful communication attempt with monitoring station
6 Bell circuit failure
7 Smoke detector zone trouble
8 Loss of time on internal clock

Press [#] to return to "Ready".

1 Low Battery... A battery trouble will be displayed and can be reported if the battery is weak, disconnected or the battery fuse is blown. Only one low battery alarm or restoral transmission takes place per arming period. Low battery trouble display is latching and can only be cleared by battery restoration, arming and disarming panel.

2 AC Power Failure... There is no audible annunciation on AC power failure. The system "Trouble" light will come on but the audible indication will not sound until there is a low battery condition. Transmission delay can be programmed for 1 to 99 minutes. See "Programming Guide" section [22].

3 Day Zone Trouble... This trouble applies only to zones which have been programmed as day zones. ("Programming Guide" sections 16 and 17). A day zone creates a trouble signal when the panel is disarmed and an alarm signal when the panel is armed.

4 Telephone Line Trouble... A telephone line trouble is generated when the line voltage drops below 3 volts for more than 60 seconds. It generates a keypad trouble when the system is disarmed and rings a local alarm when the panel is armed if section [19] light 5 is off.

5 Unsuccessful Communication... If the digital communicator is unsuccessful communicating with the monitoring station after eight attempts, a trouble is generated.
If a later attempt to communicate is successful the trouble is cleared.

6 Bell Circuit Failure... If the bell fuse fails or the bell circuit is open, a keypad trouble and a trouble transmission are generated.

7 Smoke Detector Zone Trouble... If a Fire zone is open circuit, a keypad trouble and a trouble transmission are generated. A trouble on the Fire zone will unconditionally initiate an audible indication on the keypad. This means that even if any other previous trouble has been silenced, a Fire zone trouble will restart the keypad buzzer.

8 Loss of Internal Time... When the PC3000 is powered up or reset, the internal clock needs to be set to the correct time, day, month and year. This trouble is cleared when the trouble display is viewed and exited or when an attempt is made to reset the internal time of day clock. See "[Q][6] User's Function Command" for resetting time of day clock.

If the [9] is pressed while in the trouble display mode the most recent trouble will be displayed on the zone LEDs. This trouble memory feature is useful as a diagnostic aid when installing and servicing the PC3000.

Alarm Memory Display

[Q]+[3]

Press [Q] then [3] to enter the alarm memory mode. The "Memory" light will flash and any alarm caused during the last armed period will be displayed on the zone lights. In addition to the last alarm memory there is 1 history level. After entering the memory mode (pressing [Q] then [3]), pressing [9] will cause the keypad to display the other level of alarm history. Each time [9] is pressed the keypad will beep 1 or 2 times to indicate which level of history is being viewed. When the panel is armed, the last alarm memory is cleared and the contents moves to the 1st history level. The "Memory" light will only be on when there was an alarm during the last armed period.

Press [#] to return to "Ready".

Switched Auxiliary Supply Control

[Q]+[Hold Down 4]

To interrupt the switched auxiliary power supply press [Q] then hold down [4] for the desired interrupt time. When the [4] is released the system returns to the "Ready" mode and the switched auxiliary supply is restored.

User's Programming Commands

[Q]+[5]+[MASTER CODE]

The [Q][5] user's programming command is used to program additional access codes. Up to 16 user arm-disarm codes may be programmed. The 1st code is the Master Code (factory default [1234]). The 16th code is optionally a "One Time Use" or maid code. The 16th code may be changed from a "One Time Use" code to a regular code using an installer's programming command (section [18]...1st system option code). Remember if no keypad entry is made for more than 2 minutes the keypad will return to the normal arm-disarm display and the complete command will have to be re-entered to program a new access code.

Programming Additional Access Codes

1 Press the [Q] and [5] keys then enter the Master Security Code (default [1234]) to enter the additional code programming mode. The "Program" light and "Zone 1" light will be on to show that the first code (the Master Code) is already programmed with the factory default code [1234]. The Master Code may be changed but do not try to erase the Master Code. The installer can disable user changing of the Master Code by turning on light 2 in section [19].

2 15 additional codes may be programmed. The zone lights are used to indicate which of these codes are already programmed (zone light on steady) and the one which is currently being programmed (zone light is flashing).

3 To program the second code, press [02] then enter a 4 digit code. Zone 2 light will flash and sounder will beep three times and zone light 2 will come on steady after the 4 digit code is entered.

4 To remove the second code, press [02] - the buzzer will beep three times and zone light 2 will flash. Enter [Q][Q][Q][Q], the buzzer will beep three times and zone 2 light will go out to show that the code has been removed.

5 Follow the instructions in ***3*** or ***4*** for programming or removing any of the other additional codes.

6 Do not try to remove the Master Code (1st code). The Master Code may be changed but it must not be removed. When changing the Master Code be sure to enter a valid 4 digit number (use only number keys 0 to 9). Do not enter [#] or [Q] as one of the digits. If the Master Code is forgotten and the panel is left disarmed, program a new Master Code using the [Q][8][Installer's Code][25] command. If the Master Code is forgotten and the panel is left armed, the entire programming can be reset to factory default by using the "Hardware Reset" method described on page 21.

7 To successfully program or remove additional codes, the panel must be put into the code program mode by following step 1 followed by steps 3 or 4. Note that if no key entry is made for 2 minutes the panel will go back to the normal arm/disarm mode, after which step 1 must be repeated to get back into the code program mode.

8 To exit the code program mode press [#].

To review:

programming a new code;

enter [Q] [5] [Master Code] [01 to 16] [4 digit code]
eliminating an existing code;

enter [Q] [5] [Master Code] [02 to 16] [Q Q Q Q].

Note: The access code, numbers must be entered as two digits. E.g. 02, 03,....., 15, 16.

User's Functions Command

[Q]+[6]+[MASTER CODE]

This command is used to set the system clock time and to set the Auto-arm time. It is also used to turn on and off a number of system functions. The command is used by entering [Q], [6], [Master Code] then a number from the following list to select the item to be changed.

[0] Installer's test

[1] System 24 hour clock (enter HH:MM, Day, Month, Year)

[2] Auto-arming time (enter HH:MM)

[3] DO NOT USE

[4] Quick arm enable/disable

[5] Auto-arm enable/disable

[6] Door chime enable/disable

[7] DO NOT USE

[8] Bell test function

[9] User Initiated Callup

Note: The system clock is a 24 hour clock and times must be entered as two digit number.

e.g. HH - 00, 01,.....10, 11,.....22, 23

MM - 00, 01,.....35, 36.....58, 59

[1] and **[2]** are time setting functions.

For option [1], enter 4 digits representing the time in hours and minutes (HH:MM) based on the 24 hour or military clock. Then enter 2 digits each for the day 01...31, the month 01...12, and the year xx. Always enter a leading zero where only 1 digit is required, i.e. 8:05 am would be entered as 0805 and 1:30 pm would be entered as 1330.

Option [2] requires a 4 digit entry defining the auto-arming time in hours and minutes (same procedure as item [1]).

[0], [4], [5] and **[6]** turn on and off various features. When the option key is pressed, the feature is turned on if the keypad beeps quickly 3 times. The feature is turned off if the keypad sounds one long beep.

[8] gives a 2 second bell and keypad light test.

[9] makes the panel call the Downloading computer if enabled in section [47].

Installer's Test

[Q]+[6]+[MASTER CODE]+[0]

This feature is designed to assist the installer in testing the system. In this mode, the bell or siren will operate for two seconds each time a device is tripped and the zone alarm will be put into the first level memory. The feature is automatically disabled when the panel is armed and disarmed. Each time a zone is tripped or restored in this mode, a signal, if programmed, will be transmitted to the monitoring station. If this is not desired, it is possible to disable the communicator during the test (see section [18] "1st System Option Code").

Note: Do not use the installer's test when the panel is partially armed.

Setting the Clock

[Q]+[6]+[MASTER CODE]+[1]

Setting the "System 24 Hour Clock" (item [1]) tells the system the correct time of day. If the system is without battery and AC power it cannot continue to keep time. Therefore when the panel is first powered up or when it has been without AC power long enough to completely discharge the stand-by battery, the "System 24 Hour Clock" must be reset.

Auto-arm Time of Day

[Q]+[6]+[MASTER CODE]+[2]

The PC3000 can be programmed to arm at the same time each day. Programming item [2] sets this time and the feature must be enabled as shown in item [5] (see "Auto-arm Enable" on this page).

At the selected auto-arm time the keypad beeper begins to sound and the Bell/Siren will pulse once every 10 seconds to alert anyone on the premises that the system is about to arm. The Bell/Siren pulse can be silenced in section [51] by turning light 1 on.

The keypad beeper will sound for one minute before auto-arming unless one of the following two methods is used to cancel the auto-arm.

- **Auto-arm Abort**: Any key can be pressed to abort the auto-arm sequence and silence the keypad during the one minute pre-alert (this is the default condition).

- **Auto-arm Abort with Code**: If section [51] light 2 is on, then a valid 4 digit access code is required to abort the auto-arm sequence.

The auto-arm will be attempted at the same time the following day. Any time an auto-arm is aborted using one of the above methods, the reporting code programmed in section [45] will be transmitted to the central station.

Quick Arm

[Q]+[6]+[MASTER CODE]+[4]

The "Quick Arm" feature is enabled by pressing the [4] key while in the "User Functions Command" section. When enabled (enabled 3 beeps....disabled one long beep) the panel can be armed by entering [Q][0]. The closing code transmitted for "Quick Arm" is the same as the code which is programmed for the Master Code.

Auto-arm Enable

[Q]+[6]+[MASTER CODE]+[5]

Entering [Q] [6] [Master Code] [5] will enable/disable the Auto-arming feature. When the feature is being Enabled, the keypad buzzer will sound 3 beeps and when being Disabled the buzzer will sound one long beep.

Door Chime

[Q]+[6]+[MASTER CODE]+[6]

The "Door Chime" feature is enabled by pressing the [6] key while in the "User's Functions Command" section. When enabled the keypad buzzer will beep quickly 5 times each time any zone defined as a delay or instant circuit opens or closes. The "Door Chime" feature does not operate on other zone definitions. Zone bypass may be used to eliminate "beeping" on doors where it is not wanted. This feature operates only while the panel is disarmed.

System Test

[Q]+[6]+[MASTER CODE]+[8]

Entering the System Test command will sound the bell/siren, turn ON the keypad lights and sound the keypad buzzer for 2 seconds.

If a System Test Code is programmed in section [45], it will be transmitted to the monitoring station using the land line connection.

If a System Test Code is programmed in section [45], the LINKS2000 will also be activated and "8F" - a non-programmable test code used only by the LINKS2000 - will be transmitted to the monitoring station.

User Callup

[Q]+[6]+[MASTER CODE]+[9]

This function is enabled in section [47]. When activated, the panel will call the downloading computer. The downloading computer must be waiting for the panel to call before downloading can be performed.

Installer's Programming Commands

[Q]+[8]+[INSTALLER'S CODE]

The PC3000 is completely programmed from the keypad by using commands in the [Q] [8] section. The commands are described in detail in the programming section of this manual.

"At Home" Arming

[Q]+[9]+[ACCESS CODE]

Entering [Q], [9] before the arming code, arms the panel without any entry delay on the delay zones and bypasses zones that are defined as "Home-Away". This command is used for arming the system while at home. When the panel is armed using [Q], [9], the "Armed" light will be on flashing and the "Bypass" light will be on to indicate that the "Home-Away" zones are bypassed. Once the panel is armed in this mode, using [Q], [1] will remove the bypass from those zones defined as "Home-Away" if they have ***NOT*** been manually bypassed. The [Q], [1] command used here, only removes the bypass from zones that have been Automatically bypassed with the [Q], [9] command."

"Quick Arm" Command

[Q]+[0]

Entering [Q][0] is accepted as a valid arming code when the "Quick Arm" feature is activated. Quick Arm may be used as a convenience for regular users or when the system is to be armed by individuals who are not authorized to disarm the system. See instructions in the "[Q][6] User's Functions Command" section for activating the "Quick Arm" feature. This feature should not be enabled if the One Time Use Code is enabled. The One Time Use Code must be used for arming before it is erased.

Quick Exit

[Q]+[0] When Armed

Entering [Q] [0] when the system is fully armed will allow the user 2 minutes to exit the premises through any delay zone without altering the status of the system if the Quick Exit feature is enabled. The Quick Exit feature can be enabled by turning on light 6 in section [51]. After [Q] [0] is entered into an armed system, one and only one delay zone may be tripped. Any additional activity on any other active zone will cause that zone to begin its alarm sequence.

[Q] [0] for Quick Exit on a partially armed system is not supported.

Keypad Zones

There are three zones which can be activated from the keypad. The alarm and restoral codes for keypad zones are programmed using the [Q][8] command.

Pressing the **[F]** key for 2 seconds activates a Fire alarm. The fire alarm sounds the siren/bell in a pulsed mode and is annunciated as a memory condition.

Pressing the **[A]** key for 2 seconds activates an Auxiliary keypad zone. If a reporting attempt is made to an alarm receiver and it is successful the PC3000 will acknowledge the transmission with a short series of beeps from the keypad.

Pressing the **[P]** key for 2 seconds activates the Police (or Panic) alarm. The panic alarm can be programmed for audible or silent operation (see section [18] in "Programming Guide").

There is no light annunciation from the keypad for the last two keypad zones, however, the keypad buzzer beeps 3 times to confirm activation on any of the keypad zones. If the keys are held down the buzzer continues to beep. The panic alarm can be programmed for silent confirmation in section [51] light 4.

See section [15] for alarm and restoral codes for all three keypad zones.

DOWNLOADING

The PC3000 with version 7.0 or higher software, supports the DSC "downloading" package. See the downloading manual for details on specific capabilities.

There are several sections pertaining to the downloading feature which must be programmed.

Section [23]

The time of day that the periodic download or test transmission will be done, if selected, is programmed in this section.

Section [26] - Downloading Access Code

A four digit code must be programmed into this section to allow access to the control panel by the downloading computer.

Section [46] - Downloading Computer Telephone Number

If Callback is enabled, section [47] zone light [8], then this section must be programmed with the telephone number of the downloading computer.

Section [47] - Modem Configuration

Zone lights [1] to [4] are programmed to set the number of rings the panel will look for before it answers a call from the downloading computer.

Zone light [5] is programmed to enable or disable the control panel for downloading. If downloading is disabled, all other programming sections relating to downloading need not be programmed.

Zone light [6] enables or disables user initiated callup to the downloading computer.

Zone light [7] enables or disables the answering machine defeat option (Answering Machine Over-ride).

Downloading and Answering Machine

The PC3000 software provides a means to handle downloading when an answering machine is also connected to the telephone line. In section [47], if zone light 7 is off, it is assumed that there is no answering machine connected to the telephone line and the panel will capture the line after the set number of rings.

If zone light 7 is off and an answering machine is connected and it is set to answer before the panel, the panel will be unable to receive a call from a downloading computer. If the panel is set to answer before the answering machine, the answering machine will be unable to receive incoming messages.

If zone light 7 is on and the panel is called for 1 or 2 rings only and then called again within a set time of 60 or 120 seconds (set in section 51, light 7), the panel will then answer the second call on the first ring (Answering Machine Over-ride Timer).

Once the panel is connected to a downloading computer, no [Q] functions can be performed. If the [Q] key is pressed while the panel is connected to a downloading computer, the keypad buzzer will sound one long tone to indicate an error.

Zone light [8] is programmed to enable or disable callback. If callback is disabled, the downloading computer will have immediate access to the control panel. The disabled mode is useful if there are multiple downloading computers (at different telephone numbers). If callback is enabled the downloading computer will call, request access then hang up and wait for the control panel to call. After the control panel has called back and the downloading computer and the control panel accept each other as valid, downloading operations are enabled.

Section [48] - Panel Identification Code

A 4 digit code must be programmed into this section to allow the downloading computer to identify the panel it is communicating with.

Section [49] - Periodic Function Enable/Disable

Zone light [8] is programmed to choose between periodic download (light ON) or test transmission (light OFF).

Section [51] - 3rd System Option Code

Zone light [7] sets the Answering Machine Over-ride Timer to either 60 or 120 seconds for defeating the answering machine.

See "Downloading and Answering Machine" section above.

PROGRAMMING GUIDE

Introduction

The PC3000 is programmed by entering instructions from the panel keypad. The PC3000 memory is EEPROM and can be reprogrammed thousands of times. The EEPROM will not lose memory even on total AC and battery failure. All essential program information required to define the operation of the control panel and the communicator is stored in a section of the EEPROM which can only be accessed using the Installer's Programming Code. If the code is forgotten, the default program code can be re-inserted by using the "Hardware Reset" described on page 21, unless Installer's Lockout is enabled. See sections [90] and [91].

To begin programming the PC3000, enter [Q], [8], [3000] while the panel is disarmed. Installer's Programming can only be done while the panel is disarmed and not in alarm. The factory default Installer's Programming Code is [3000]. This default code can be changed using the Section [24] command listed below (new Installer's Code). Once the basic Installer's command is entered ([Q] [8] [3000]) the "Program" light will start to flash. The "Program" light will continue to flash while programming. Note that while programming, if no key entry is made for more than 2 minutes, the keypad will return to the arm-disarm mode and the complete installer's command ([Q] [8] [3000]) must be entered before programming can resume.

The next step is to enter a 2 digit section entry for any of the commands described in the following pages. Note that while the keypad is waiting for the section entry the "Armed" light is on steady. As soon as the 2 digits are entered for the section the keypad will beep 3 times, the "Armed" light will go out and the "Ready" light will go on. The keypad is then ready to accept data entry for the selected section.

A complete description of each programming section will be given in the remaining pages of this section. A programming work sheet summarizing all programming commands is provided in the next section of the manual. Fill out the work sheet and use it as a guide when programming.

As the required data for a programming section is entered, the hexadecimal value of the information in that location is displayed on zone lights 1-15. Most sections contain several groups of two digit entries. The keypad beeps twice and the "Armed" light flashes after each group of two digits is entered. When the required data is completely entered for the section being programmed, the keypad will beep 5 times and the "Armed" light will come back on to indicate that the expected data has been entered and another section can be selected for programming. After completing one section, it is not necessary to re-enter the [Q] [8] [Installers' code] portion of the command. Just enter the number of another programming section. When programming a section, it is possible to exit by pressing [#]. Only the data entered before pressing [#] will be changed in the EEPROM. Practice entering data in several sections until you become familiar with the programming commands.

Certain programming entries may require "HEX" data. That is the numbers 0 through 9 and the letters A through F (in "HEX" numbering the letters A...F represent the numbers 10...15). Where commands require "HEX" data A-F, first press [Q]. The keys 1-6 now assume the hex values A-F and the "Ready" light begins to flash. Key 1 = A, Key 2 = B, Key 3 = C, Key
4 = D, Key 5 = E and Key 6 = F. Pressing the [Q] again stops the "Ready" light from flashing and the keys assume the normal values for the numbers from 1 to 9. The most common mistake in entering "HEX" data is forgetting to press [Q] again after entering the "HEX" digit to return to normal number entry.

The data for sections 18, 19, 20, 21, 29, 30, 31, 32, 43, 44, 47, 49 and 51 is entered using the keypad zone lights to indicate which functions are active and the number keys to turn functions on and off. When the section number is entered, the zone lights 1...8 will display which functions are currently on. Pressing the number key corresponding to the zone light alternately turns the function on and off. All functions can be turned off by entering [0]. When the correct selections have been made press [#] to record them in memory and to go on to program the next section.

Reviewing Programmed Data

Enter the section you wish to review by entering the 2 digit section number. The zone LED's will represent the value (hexadecimal format) of the first digit in that section. Each press of the 'F' key will advance the display to the next digit. At the end of the section, the keypad buzzer will beep several times and return you to the program mode where another section can be selected for review or programming.

Note: Only sections [01] through [17], [22] through [28], [33], [45], [46], [48], and [52] through [53] can be reviewed using the above method.

[00] Binary Programming

This section is normally used upon instruction from factory technical personnel for specialized programming not covered by the standard programming instructions.

[01] 1st Phone Number

For land line communications, this is the first telephone to which the communicator will dial (see section [33] "Call Direction Options").
After entering the section number [01], enter the communicator telephone number the way you would dial it on a telephone. Press [#] after the last digit to complete the telephone number programming.

Enter [Q 2 Q] to dial a 'Q' (Hex B)

Enter [Q 3 Q] for a 4 second pause (Hex C)

Enter [Q 4 Q] for additional dial tone search (Hex D)

Enter [Q 5 Q] to dial a '#' (Hex E)

The total number of digits including dial tone searches and pauses must not exceed 16. Remember to press [#] after entering the last digit of the phone number. Press [02] to program the next section, enter another section number or

press [#] a second time to return to the arm/disarm mode.

[02] 1st Account Code

The 1st Account Code is always transmitted to the 1st Phone Number to identify the client.

After entering the section number [02], enter a 4 digit number. If "HEX" digits A to F are required; enter [Q], [1]...[6] and [Q] again to return keys to normal decimal entry. Where a zero digit in the account code is required use "HEX A" ([Q][1][Q] to transmit 10 pulses. The receiver at the monitoring station interprets 10 pulses for a digit as a zero. If a three digit code is required as in 3/1 formats, enter [0] as the last digit. [0] represents a null digit....no pulses transmitted.

[03] 2nd Phone Number

This is the 2nd phone number to which the panel will transmit data. See section [01] "1st Phone Number" for programming instructions.

[04] 2nd Account Code

The 2nd account code is always transmitted to the 2nd phone number. See section [02] "1st Account code" for programming instructions.

Reporting Codes Explanation

Sections [05] to [15] are used to program the communicator reporting codes. A reporting code is transmitted along with the account code with each transmission. If the reporting codes are not programmed in these sections no transmission will be sent when an event (i.e. alarm, restoral, opening/closing, trouble etc.) takes place. To prevent a transmission from being sent for any event in the following sections leave it unprogrammed or enter [00] as the reporting code.

Eight reporting codes are programmed in each section. Once the section number is entered, the keypad expects 8 two digit numbers to be entered for the 8 reporting codes in that section. The keypad beeps twice and the "Armed" light flashes after each 2 digit number is entered. After the 8th code is entered, programming of the current section is complete. The keypad will beep 5 times, the "Ready" light will go off and the "Armed" light will go on. The keypad is then ready to accept the next section number for programming.

When changing the reporting codes in a section, only code entries up to the one which is being changed need to be entered. Press [#] to exit from the programming sequence. Only codes up to the last one entered will be changed.

[05] Alarm Reporting Codes Zones 1 to 8

Once the Section code [05] is entered, the keypad expects 8 two digit numbers to be entered as the reporting codes for zones 1 to 8 alarms (restorals in Section [07]). These codes are used by the communicator when there has been an alarm on zones 1 to 8. Listed below are several programming examples and the resulting transmission using different formats for the reporting codes. Obtaining different formats requires entering data correctly in the account code section ([02] or [04]) reporting codes sections ([05] to [15]) and communication format options, section ([27]).

3/1 Format....Single Line or Non-extended Reporting

Required:

- 3 digit account code in sections [02] or [04] i.e. enter [1230] for account code 123
- Format code [0], [1], [2], [3], [4] depending on receiver type selected in section [27]
- Single digit alarm reporting code in section [05] i.e. enter [30] for single digit code 3 (0 is null digit i.e. no pulses transmitted)

Transmission sent:

- 123 3

4/2 Format....Single Line Reporting

Required:

- 4 digit account code in Sections [02] or [04] i.e. enter [1234] for account code 1234
- Format code [0], [1], [2], [3], [4] depending on receiver type selected in section [27]
- Two digit alarm reporting code in section [05] i.e. enter [31] for two digit code 31

Transmission sent:

- 1234 31

3/1 Format....Extended Reporting

Required:

- 3 digit account code in Sections [02] or [04] i.e. enter [1230] for account code 123
- Format code [8], [9], [A], [B], [C] depending on receiver type selected in section [27]
- Two digit alarm reporting code in section [05] i.e. enter [31]

Transmission sent:

- 1st round 123 3
- 2nd round 333 1

If a transmission is not wanted for a particular reporting code, then enter 00 to disable that reporting code.

[06] Alarm Reporting Codes Zones 9 to 16

These reporting codes are used by the communicator to transmit a zone alarm for zones 9 to 16. Use instructions in section [05] as a guide for programming.

[07] Restoral Reporting Codes Zones 1 to 8

These reporting codes are used by the communicator to transmit a zone restoral for zones 1 to 8. Use instructions in section [05] as a guide for programming.

[08] Restoral Reporting Codes Zones 9 to 16

These reporting codes are used by the communicator to transmit a zone restoral for zones 9 to 16. Use instructions in section [05] as a guide for programming.

[09] Utility Alarm Reporting Codes

These reporting codes are used by the communicator to transmit the following conditions.

- Fire Zone
- Auxiliary Input Zone
- Battery Trouble
- AC Failure Trouble
- Day Zone(s) Trouble
- Bell Circuit Trouble
- Fire Zone Trouble
- Auxiliary Power Supply Trouble

Use instructions in section [05] as a guide for programming.

See "Terminal Connections" section of manual for a description of the operation of the Fire Zone and the Auxiliary Input Zone. Section [28] contains options for Auxiliary Input Zone. The Battery Trouble reporting code will be sent when the battery voltage drops below 11.5 volts. This reporting code will also be sent because of a battery fuse failure. The battery is tested under load every 10 seconds. Only one transmission will be sent during an arm or disarm period to prevent multiple transmission from a weak battery. The AC Failure Trouble reporting code will be sent after the delay time programmed in section [22]. This prevents transmissions during temporary power failures. Auxiliary Power Supply Trouble reporting code is sent when the auxiliary power supply fuse failed. The Bell Circuit Trouble reporting code is sent when the bell circuit is open or the fuse failed. The Fire Zone Trouble code is sent when the fire zone becomes open circuit (E.O.L. resistor is disconnected). The Day Zone Trouble code is sent when any zone defined as a Day Zone (see section [16], [17]) goes open when the system is disarmed. See [Q][2] "Trouble Command" section for additional description of troubles.

Notes: For UL installations, either AC failure or Battery Trouble reporting must be enabled.

[10] Utility Restoral Reporting Codes

These reporting codes are used by the communicator to transmit the following list of restoral conditions which correspond to alarm conditions in section [09]. Use instructions in section [05] as a guide for programming.

- Fire Zone
- Auxiliary Input Zone
- Battery Trouble
- AC Trouble
- Day Zone(s) Trouble
- Bell Circuit Trouble
- Fire Zone Trouble
- Auxiliary Power Supply Trouble

[11] Reporting Codes for Closing (Arming) via Access Codes 1 to 8

The reporting codes in sections [11] to [14] are used to identify "Openings and Closings" (disarming and arming of the system) by user access code.

After entering the section code [11], enter 8 two digit reporting codes. The 8 reporting codes correspond to the first 8 access codes which are programmed using the [Q][5] command. When the system is armed using one of the access codes, the corresponding reporting code is transmitted.

When transmitting in any of the extended formats, (see examples in section [05]), closing codes would be programmed as follows. [C1], [C2], [C3], [C4], [C5], [C6], [C7], [C8].....

Where the first digit "HEX C" is one which is used to represent a closing signal (this could be another number depending on what is used at the monitoring station) the 2nd digit represents the access code which was used to arm the system.

The closing code transmission takes place after the exit delay time. Therefore if the system is armed and disarmed before the expiry of the exit time, no transmission will take place.

Remember that the 1st user code is the master code and that the 16th code may be the temporary or maid's code. The 16th user code can be converted to a normal code using one of the options in section [18].

When the system has been armed using "Quick Arm" [Q][0] or "Auto-arm" (see [Q][6] "Keypad Commands"), the 1st reporting code (reporting code for master code) will be transmitted. The master code is required to enable or disable these functions.

When the system is armed with one or more zones bypassed (see [Q][1] command for zone bypassing), the monitoring station can be notified by programming the Partial Arm reporting in section [15]. Note that the Partial Closing code is sent in tandem with the regular closing code to identify it as a partial closing condition.

[12] Reporting Codes for Closing (Arming) via Access Codes 9 to 16

See section [11] for further information.

[13] Reporting Codes for Opening (Disarming) via Access Codes 1 to 8

The 8 reporting codes correspond to the first 8 user access codes which are programmed using the [Q][5] command. When the system is disarmed using one of the access codes, the corresponding reporting code in this section is

transmitted.

See section [11] for an example of "Opening and Closing" reporting code programming.

[14] Reporting Codes for Opening (Disarming) via Access Codes 9 to 16

See section [13] for further information.

[15] Reporting Codes for Miscellaneous Functions

The reporting codes programmed in this section include the Partial Closing code described in section [11], Alarm and Restoral codes for the keypad zones and the Periodic Test reporting code (every 1 to 99 days). The Periodic Test cycle time is set in Section [22] and reporting time of day is set in section [23].

The reporting codes are programmed in the following order.

- Partial Closing
- Keypad Panic Alarm [P]
- Keypad Fire Alarm [F]
- Keypad Auxiliary Alarm [A]
- Keypad Panic Restoral [P]
- Keypad Fire Restoral [F]
- Keypad Auxiliary Restoral [A]
- Periodic Test Transmission

[16] Zone Definitions for Zones 1 to 8

As in the reporting codes,once this section number is entered, 8 two digit numbers are required. Each 2 digit number entered describes how a zone will operate. The 8 two digit numbers entered correspond to zone definitions for zones 1 to 8.

The first digit entered determines whether the zone will be audible or silent and whether it will have a fast or slow response time (zone response time may be altered in section [22]). The second digit determines the zone type (i.e. delay, instant, interior, or 24 hour zone).

1st DIGIT	2nd DIGIT
0 = Slow, audible	0 = Delay
* 1 = Slow, silent	1 = Instant
2 = Fast, audible	2 = Interior
* 3 = Fast, silent	3 = Interior Home-away
	4 = 24 Hour..bell
	5 = 24 Hour..bell/buzzer
	* 6 = 24 Hour buzzer
	7 = Double delay
	8 = 4 X Delay
	9 = Day
	A = Delay Home-away

* Not allowed for UL Local installations

The maximum delays allowed for UL installations are: Entry delay = 45 seconds; Exit delay = 60 seconds.

All of the zone types, except the 24 hour zones and day zone, have an exit delay (see section [22] for setting exit and entry delay times). All zones with an exit delay may be tripped during the exit delay without creating an alarm.

If you are not familiar with the different zone types, test them to see how they function. To avoid confusion, be sure the exit time has expired before creating alarms ("Ready" light will go out when exit time has expired). Set short exit and entry times for testing.

[0] Delay Zone is used for the exit/entry door. It has an exit delay and an entry delay. The exit delay starts as soon as the panel is armed. The zone may be opened and closed during the exit delay without creating an alarm. After the exit delay has expired, an open on the zone will cause the entry delay time to start. During the entry time the keypad buzzers will sound steady. If the panel is disarmed before the entry time expires no alarm will be generated. Type [7] and [8] Delay zones are used where a longer entry delay time is required such as with a garage door. With these two zone types the exit delay is the same as the type [0] delay. However, the entry delay times are either 2 or 4 times as long (set the exit delay time for the maximum required).

[1] Instant Zone is normally used for door and window contacts. This zone has a normal exit delay but will generate an alarm immediately when opened after the exit delay.

[2] Interior and [3] Interior Home-Away Zones are used with interior motion detectors. Both zones have standard exit delays. They also have entry delays provided that a delay zone has been tripped first. If the building is entered without coming through the normal delay entrance and a type [2] or [3] zone is tripped, an immediate alarm will be generated. The type [3] zone is bypassed if the system is armed using the [Q][9] command (at home arming) or if a Delay zone is not tripped during the exit delay.

[4], [5] and [6] 24 Hour Zones provide different audible variations. 24 Hour Zones are always active and create an alarm whether or not the panel is armed. Type [4] always rings the bell or siren. Type [5] rings the bell or siren when armed and the keypad buzzer when disarmed. Type [6] always sounds the keypad buzzer.

[7] Double Delay and [8] 4 x Delay Zones feature entry and exit delay that are 2 times and 4 times as long as a normal entry or exit delay. They would be used for zones that require an extra long entry or exit delay time; for example, an overhead garage door.

Note: For UL installations, the maximum allowable Entry Delay is 45 seconds, and the maximum allowable Exit Delay is 60 seconds.

[9] Day Zone is a variation of a 24 hour zone. It operates as a type [5] zone by ringing the bell or siren when armed and the keypad buzzer when disarmed (2 beeps every 10 seconds; pressing any key silences keypad buzzer). However, a trouble transmission (programmed in section [10]) is sent when the system is disarmed rather than an

alarm transmission (programmed in section [05] and/or [06]).

[A] Delay Home-Away Zone operates the same way as the Type [3] zone with the following exception. If the zones are not bypassed manually ([Q] [1] bypassed or [Q] [9] armed), or automatically (not opening a delay zone during the exit delay), and the zone is tripped, a standard entry delay will be initiated. This allows the user to disarm the system preventing false alarms inside the premises. Upon entering [Q] [1] to activate Home-Away zones, the type [A] zone will have a standard exit delay.

[17] Zone Definitions for Zones 9 to 16

1st DIGIT	2nd DIGIT
0 = Slow, audible	0 = Delay
* 1 = Slow, silent	1 = Instant
	2 = Interior
	3 = Interior Home-away
Note:	4 = 24 Hour..bell
Zones 9-16 cannot be	5 = 24 Hour..bell/buzzer
programmed for fast	* 6 = 24 Hour buzzer
response - Do not use	7 = Double delay
fast response devices	8 = 4 X Delay
on these zones.	9 = Day
e.g. vibration detector.	A = Delay Home-away

* Not allowed for UL Local installations

The maximum delays allowed for UL installations are: Entry delay = 45 seconds; Exit delay = 60 seconds.

[18] 1st System Option Code

The 1st system option code is set using the zone lights to indicate which options in the following list are active. Once Section [18] is entered the 8 zone lights will indicate which options are active. Press the corresponding number key to turn an option on or off. Press [0] to turn all options off.

[1] Light off= Communications enabled

Light on= Communications disabled

[2] Light off= Zone restorals transmitted on disarming (This is a form of swinger shuntdown)

Light on= Zone restorals transmitted on bell time out

[3] Light off= No alarms are displayed while panel is armed

Light on= Alarms are displayed on keypad zone LEDs while panel is armed

[4] Light off= Panel dials pulse (rotary dialing)

Light on= Panel dials DTMF (touch tone dialing)

[5] Light off= Zones 1 to 16 use end-of-line-resistor

Light on= Zones 1 to 16 use normally closed zones

[6] Light off= Keypad panic [P] bell is silent

Light on= Keypad panic [P] bell is audible

(See "Keypad Zones")

[7] Light off= Call 1st phone with backup to 2nd phone

Light on= Becomes 1st phone number only

(Do not program backup to 2nd phone number if no 2nd phone number is programmed. See "Call Direction Options", section [33].)

[8] Light off= 16th code becomes normal access code

Light on= 16th code is One-time use code
(See [Q] [5] "User Programming Commands")

[19] 2nd System Option Code

Use same method of programming as used in section [18].

[1] Light off= Bell responds normally

Light on= Bell pulses always

(Bell will pulse for alarm or fire if enabled)

[2] Light off= Master Code changeable by user

Light on= Master Code changeable by installer only

(See [Q] [5] "User Programming Commands".)

[3] Light off= Disable bell squawk when arm/disarm

Light on= Enable bell squawk when arm/disarm
(1 burst on Arm/2 bursts on Disarm)

[4] Light off= Mode 2 operation

Light on= Mode 1 operation

(See "Long Range Radio Operation" for explanation, page 3.)

[5] Light off= TLM trouble, audible bell when armed

Light on= TLM trouble only, armed or disarmed

(TLM = Telephone Line Monitoring)

[6] Light off= Accepts 2300 Hz (standard) handshake

Light on= Accepts 1400 Hz handshake for Radionics formats #3, 4, B and C in section [27]
(See Radionics format description, page 20.)

[7] Light off= Enable Telephone Line Monitoring (TLM)

Light on= Disable Telephone Line Monitoring (TLM)

[8] Light off= No access code required for zone bypassing

Light on= Use [Q]+[1]+[Access Code] for zone bypassing (shunting)

[20] Zones 1 to 8 Bypass Mask

Use the same method of programming as used in section [18]. Using this section it is possible to control which zones the user is able to bypass using the [Q][1] command. If the zone light is on the zone can be bypassed. If the zone light is off that zone cannot be bypassed.

[21] Zones 9 to 16 Bypass Mask

Use same method of programming as used in section [20].

Note: Zone lights 1 to 8 represent zones 9 to 16 in this section, to allow single digit entry.

[22] System Times

Once the section number is entered, six 2 digit numbers are expected to be entered. The valid range for entries in this section is 01 to 99. Hex values or 00 are not allowed. The times are entered in the following order:

- Entry delay time (in seconds)
- Exit delay time (in seconds)
- Bell cut-off time (in minutes)
- Delay before AC failure trouble reporting (in minutes)
- Slow zone response time (in 10 ms increments) Default zone response - 500 ms
- Test transmission/periodic download cycle time (in days)

AC Failure Reporting Code is transmitted after the delay programmed, which may be up to 99 minutes. The reporting code for AC Failure Trouble is programmed in sections [09] and [10].

The Zone Response Time is the length of time that an alarm condition must be present on a zone before it is detected. Certain vibration detectors, shock sensors and glass break detectors require a fast response zone in order to operate. The zones to which these types of detectors are connected should be programmed as fast response zones. All other zones should be programmed as slow response zones. Zones are defined as either fast or slow response time in Section [16]. The fast response time is fixed at 10 milliseconds. The Slow Zone Response Time is programmable in increments of 10 milliseconds. The normal entry would be 50 for a 500 ms slow response time.

A Test Transmission or a Periodic Download may be done according to how section [49] light 8 is set. The test transmission and periodic download both use the same cycle time which is set in section [22] and the same time of day as set in section [23]. The test transmission is sent to the monitoring station to confirm that the communication link is intact. The reporting code must be programmed in section [15]. The periodic download must be used in conjunction with the downloading computer "waiting for a panel to call".

Note: The maximum delays allowed for UL installations are: Entry delay = 45 seconds; Exit delay = 60 seconds.

[23] System Clock Times

After the section number [23] is entered, two 4 digit numbers are expected. These numbers are the following system times:

- Automatic arming time of day (HH:MM)
- Test transmission time of day (HH:MM)

Times are entered using the "24 hour clock" (military time). Valid entries are 00 to 23 for HH (i.e. hours) and 00 to 59 for MM (i.e. minutes). ***Note: IF INVALID TIMES ARE ENTERED FUNCTIONS WILL NOT WORK. The automatic arm function is enabled and disabled using the [Q][6][Master Code] User's Functions Command.***

[24] New Installer's Code

[25] New Master Code (Access Code Number 1)

[26] Downloading Access Code

Enter a new 4 digit code in each of sections 24, 25 and 26 once the section number has been entered. Only use digits 0 to 9 as code numbers. Do not press the [Q] or [#] keys.

Note: If an error is made in entering a code, continue to enter the four digits then enter the section number again and re-enter the correct code. Do not press the [Q] or [#] while entering these codes. Do not make any of the three codes the same.

[27] Communicator Format Options

This section sets the type of format which will be sent to each of the two telephone numbers programmed in sections [1] and [3]. Enter one HEX digit (i.e. when entering HEX "A" press [Q][1][Q]) for each. The number entered for each phone number is determined by the requirements of the receiver being called. Enter the format number for the "1st Telephone Number" first. It is necessary to program the format number for each telephone number even if the first phone number is the only one being used. Options are as follows.

[0] Silent Knight/Ademco slow, 10 BPS (1400 Hz handshake) 3/1 and 4/1, 4/2 non extended format

[1] Sescoa, Franklin, DCI, Vertex, 20 BPS (2300 Hz handshake) 3/1 and 4/1, 4/2 non extended format

[2] Silent Knight fast, 20 BPS (1400 Hz handshake) 3/1 and 4/1, 4/2 non extended format

[3] Radionics, (2300/1400 Hz handshake) 3/1, 4/2 non extended format

[4] Radionics, (2300/1400 Hz handshake) 3/1, 4/2 non extended with parity format

[5] Sescoa super speed

[6] Not used

[7] Not used

[8] Silent Knight/Ademco slow, 10 BPS (1400 Hz handshake)
3/1 extended format

[9] Sescoa, Franklin, DCI, Vertex, 20 BPS (2300 Hz handshake) 3/1 extended format

[A] Silent Knight/Ademco fast, 20 BPS (1400 Hz handshake) 3/1 extended format

[B] Radionics, (2300/1400 Hz handshake) 3/1 extended format

[C] Radionics, (2300/1400 Hz handshake) 3/1 extended with parity format

[D] Sescoa super speed (with identified openings/closings)

[E] Not used

[F] Not used

Note: Do not use option [5] or [D] for LINKS2000 transmissions.

Communications Compatibility

All these communication formats are compatible with the Silent Knight model SK9000 and Ademco model 685 receivers with the exception of formats [5] and [D]. Formats [5] and [D] are compatible with the SESCOA model 3000C receiver.

Note: For UL installations, ensure that the control unit is reporting to one of these receivers.

10 BPS and 20 BPS Formats

10 BPS is the standard slow format used on Silent Knight/ Ademco receivers.

DATA=1900 Hz KISSOFF=1400 Hz SPEED=10 BAUD

20 BPS is the standard fast format used on DCI, Franklin, Sescoa and Vertex receivers.

DATA=1800 Hz KISSOFF=2300 Hz SPEED=20 BAUD

Radionics Format

For conventional 3/1 Radionics format the communications mode should be set to either Radionics rounds [B] or Radionics parity [C]. The extended version of the Radionics format is normally used. The following guidelines have been provided to help in configuring the PC3000 for Radionics format.

1. The customer account code must be only 3 digits with a zero making up the 4th digit (i.e. program 1230 for account code 123).
2. The zone alarm reporting codes must all be single digit numerical codes with no extended 2nd round being sent. The zero in the 2nd digit of the reporting code tells the PC3000 not to send an extended round.
3. All other non-alarm reporting codes must be set up to send an extended 2nd round. The 1st digit of the reporting code is used to identify the event while the 2nd or extended digit is used to associate the event with a particular item. (i.e. A reporting code of E3 means restore zone 3. E for restore and 3 for zone 3.)
4. The following is a list of 1st digit identifiers that should be used with the Radionics format.

Restorals "E"	Example "E3" =	Restore Zone 3
Openings "B"	Example "B2" =	Opening by User 2
Closings "C"	Example "C4" =	Closing by User 4
Troubles "F"	Example "F5" =	Trouble from Source 5
Misc "D"	Example "D1" =	Partial Closing

Sescoa Super Speed Format

The Sescoa Super Speed Format must be programmed exactly as follows to function correctly.

1. The account code must be four decimal digits in length and in the range of 0001 to 3374.
2. The reporting codes must be 2 digits in length and programmed as follows.

Alarms Zones 1-8 (section [05])	A1 to A8
Alarms Zones 9 -16 (section [06])	A9, 1A, 11 to 16
Restorals Zones 1- 8 (section [07])	A1 to A8
Restorals Zones 9 -16 (section [08])	A9, 1A, 11 to 16
All Opening Codes (sections [13] and [14])	BA
All Closing Codes (sections [11] and [12])	CA
Partial Closing (section [15])	C1
Low Battery (section [09])	E1
Battery Restorals (section [10])	E1
AC Failure (section [09])	E1
AC Restoral (section [10])	E1
Bell CCT. Trouble (section [09])	F1
Bell CCT. Restoral (section [10])	F1
Troubles (sections [09] and [10])	AA
Misc Alarms (section [15])	(A1 to 99)
Test Code (section [15])	1C or DC
System Test Code (section [54])	CC
After Alarm Code (section [50])	B1
Auto-arm Abort Code (section [53])	C8
TLM Restoral Code (section [45])	EE

[28] Programmable Input Options

Auxiliary Input Zone operation is programmed in this section. Select a function from the list below by entering a 2-digit number:

[12] Silent 24-hour Input

[22] Audible 24-hour Input

[32] Momentary Arming Input

[42] Forced Answer

Option [32] may be used for keyswitch arming and disarming. When option [32] is selected, a momentary closure between the AUX IN and SW AUX terminals will arm or disarm the system. The Auxiliary Input Reporting Codes programmed in sections [09] and [10] may be used as

Opening and Closing Reporting Codes for keyswitch arming. Note that these codes will only be transmitted for Side A openings and closings.

Option [42] may be used to force the system to pick up the telephone line and await communications. This option may be used for downloading functions.

Refer to "Auxiliary Input Terminal" in the Terminal Connections section of this manual for information on wiring the Auxiliary Input Terminal.

Note: Only the 2-digit codes described above may be entered in this section.

[29] [30] [31] [32] Split Arming

Note: Split arming is not allowed for UL installations.

"Split Arming" feature permits a single control panel to act as two independent alarm systems, each with its own opening and closing schedules, zone assignments and authorized users.

The allowable zone and access code assignments to system A or system B are described below. Typically, zones and access codes are assigned to either Group A or Group B but the PC3000 can be programmed for zones and access codes that are common to both Group A and Group B.

The following four sections are each programmed the same as section [18].

Split System Zone and Access Assignments

[29] Group A Zone Assignment for Zones 1 to 8.
Note: Zones 9 to 16 are always assigned to Group A.

[30] Group B Zone Assignment for Zones 1 to 8.
Note: Zones 9 to 16 cannot be assigned to Group B.

[31] Group A Access Code Assignment for Codes 1 to 8.
Note: Codes 9 to 16 are always assigned to Group A.

[32] Group B Access Code Assignment for Codes 1 to 8.
Note: Codes 9 to 16 cannot be assigned to Group B.

Common Zones

If a zone (1 through 8 only) is assigned to both Group A and Group B then both Group A and Group B must be armed for that zone to be armed.

Common Access Code

If an access code (1 through 8 only) is assigned to Group A and Group B then that access code will arm and disarm the entire panel.

Armed Status Indications

When the panel is established as a split system, and ONE side only [Group A or B] is armed, the "Armed" indicator will flash and the zone indicators for the group that has been armed will flash.

If both Group A and Group B are armed the "Armed" indicator will be on steadily and the zone lights will not flash.

Zone Bypassing Access Code

When the system is established for split arming, user zone bypassing should be set so that bypassing requires the use of an access code (See section [19]).

Notes:

1. The following restrictions apply to split arming applications:
- ***The Master Code must be assigned to side A and B.***
- ***All codes and zones must be assigned even if not used.***
- ***Transmission delay must not be used.***
- ***Home - Away zones must not be used.***
- ***The "One-Time Use" code must not be used.***

2. Quick Exit and Alarm Displayed while Armed will only work in a fully armed system.

3. Keyswitch arming will report with side A openings and closings only.

[33] Call Direction Options

Programming this section tells the dialer whether to send transmissions to the 1st or 2nd telephone number.

There are four classes of dialer call direction options.
[0] No transmission for this group
[1] Call 1st phone number with back up to 2nd number
[2] Call 2nd phone number only
[3] Always call both phone numbers

Option [1] becomes "Call 1st number only" when item [7] in section [18] is turned on (LIGHT ON). Do not program backup to 2nd phone number in section [18] unless a 2nd phone number is programmed.

After entering the section number, enter [0], [1], [2] or [3] for each of the following reporting code groups in the order given (total of six digits).

- Zone Group A Alarms and Restorals
- Zone Group B Alarms and Restorals
- Access Codes Group A Openings and Closings
- Access Codes Group B Openings and Closings
- Priority Alarms and Restorals
- Maintenance Alarms and Restorals

Note: LINKS2000 transmissions will be made for events programmed for 1st phone number (option [1]) or both phone numbers (option [3]). Reporting code groups programmed with option [0] or option [2] will not be sent with LINKS2000 LRR connection.

[34] Software Reset EEPROM Memory to Factory Defaults

This section is used to reset the EEPROM memory to the original factory default values. As soon as [34] is entered the EEPROM is reset and the program is restarted as though power has just been applied.

Hardware Reset of EEPROM Memory to Factory Defaults

If the Installer's Code is lost through inadvertent programming, the only means of reprogramming the system is via a hardware reset. If the Installer's Lockout is enabled, there is no way to reprogram the system without entering the correct Installer's Code.

Follow the sequence outlined below to reset the panel to factory default conditions.

1. Power unit down by removing both AC and battery power.
2. Using a short jumper, short pins marked "EEPROM RESET" together.
3. Power PC3000 up.
4. Wait for 10 seconds. During this time the "Program" light will flash.
5. Remove the shorting jumper.
6. The system will have reloaded the EEPROM with the factory default codes.

[35] Through [42] Reserved for Future Use

[43] Access Bypass Mask (Codes 1 to 8)

Use the same method of programming as used in section [18]. In this section it is possible to control which users can bypass zones. If the zone light is on, that user can bypass, if that zone light is off, that user cannot bypass.

[44] Access Bypass Mask (Codes 9 to 16)

Program using the same method as section [43].

Note: Zone lights 1 to 8 represent access codes 9 to 16.

[45] Miscellaneous Function Reporting Codes

Refer to Section [05] for instructions on programming reporting codes. Enter a 2-digit number for each reporting code, or enter "00" or hexadecimal "FF" to disable a function.

- **System Test Code** is reported every time a bell test is performed by entering the [Q][6][Master Code][8] command.
- **Auto-arm Abort Code** is reported each time Auto-Arming is cancelled
- **Opening After Alarm Code** is reported with or without an Opening Code if an alarm occurred during the last armed period.
- **TLM Alarm Code** is transmitted through the LINKS2000 connection to report TLM troubles on the normal land line.
- **TLM Restore Code** is transmitted when TLM troubles are restored. After this code is transmitted, all codes that could not be reported due to the TLM trouble will be transmitted.

[46] Downloading Computer Telephone Number

This is the telephone number that the panel would use to call the downloading computer if the CALLBACK feature (section [47]) is enabled or if a user initiated call up is done. ([Q]+[6]+[Master Code]+[9]).

[47] Modem Configuration

This section is used to enable the Downloading function. If Downloading is enabled then the Downloading access code must be entered, (section [26]) and the Panel Identification Code must be entered (section [48]). If Callback is enabled the downloading computer's telephone number must be entered (section [46]).

Lights [1]to [4]: see chart on page 34.

[5] Light off = Downloading disabled
Light on = Downloading enabled

[6] Light off = No user initiated call up
Light on = User initiated call up

[7] Light off = Answering machine over-ride disabled
Light on = Answering machine over-ride enabled

[8] Light off = Call back disabled
Light on = Call back enabled

(See "Downloading".)

[48] Panel Identification Code

Program using the same method as sections [24], [25] and [26].

[49] Periodic Function Enable/Disable

[1]*Light off = For future use
Light on = For future use

[2]*Light off = For future use
Light on = For future use

[3]*Light off = For future use
Light on = For future use

[4] Light off = For future use
*Light on = For future use

[5]*Light off = For future use
Light on = For future use

[6]*Light off = For future use
Light on = For future use

[7]*Light off = For future use
Light on = For future use

[8]*Light off = Test Transmission enabled
Light on = Periodic Downloading enabled

* is default condition.

[51] 3rd System Option Code

[1] Light off = Bell squawks once every 10 seconds during auto-arm
Light on = Only the buzzer will sound during auto-arm (see auto-arm, [Q]+[6]+[Master Code]+[2])

[2] Light off= Any key will abort the auto-arm

Light on= Only an access code will abort the auto-arm (see auto-arm, [Q]+[6]+[Master Code]+[2])

[3] Light off= Keypad LEDs always active

Light on= Keypad LEDs turn off after two minutes of no key entry. Any alarm, entry delay or key press will reactivate LEDs.

Note: This feature must not be used with an LCD keypad.

[4] Light off= Keypad buzzer audible indication of panic

Light on= Keypad no buzzer on panic alarm
(See "Keypad Zones", page 12.)

[5] Light off= Keypad fire key enabled

Light on= Keypad fire key disabled

[6] Light off= Quick exit disabled

Light on= Quick exit enabled
(See "Quick Exit", page 12.)

[7] Light off= Answering machine over-ride timer is 60 seconds

Light on= Answering machine over-ride timer is 120 seconds

(See "Downloading and Answering Machine", page 13.)

[8] Light off= Disable bell shutdown

Light on= Enable bell shutdown
(Any zone that goes into alarm will only trigger one bell output per alarm. The 'Restorals on Disarming' feature is recommended to be used with this feature.)

[52] Delay Before Transmission

Program the same as section [22]. This section defines how long in seconds a burglary zone will wait before transmitting an alarm.The fire zone and 24 hour zones do not have a delay. The time may be programmed from 00 to 99 seconds where 00 means no delay. If the system is disarmed before the delay in transmission expires, no transmission will take place.

[53] Long Range Radio Account Code

Program a 4-digit Account Code in this section using decimal numbers 0 through 9 and hexadecimal numbers A through F. If a "0" (zero) is required in the code, enter [0]. This code will be used to identify the panel during LINKS2000 transmissions.

Note: In this programming section ONLY, enter [0] if a zero is used in the account code. Entering [Q][1][Q] will place an "A" in the account code.

[54] Long Range Radio Installer's Test Mode

When this section is entered, the control panel will initiate a 10-second transmission through the LINKS2000 connection. This transmission is used to test the transmitter; consult with the monitoring station to determine their set-up and testing requirements.

[90] Installer's Lockout Enable

This feature is enabled by entering [90] while in the Installer's Programming mode. A factory default (hardware or software) will not reset the Installer's Code or the download access code once this feature is enabled. A panel that has this lockout feature enabled will give a distinctive audible indication upon power up. This indication is the phone line relay clicking ten times. Make sure that your new Installer's Code has been entered correctly before enabling this feature because there is no way of re-entering the programming mode without the new Installer's Code. Even a reset to the factory default will not change the Installer's Code back to default.

[91] Installer's Lockout Disable

Entering [91] when in the Installer's Programming mode will disable the Installer's Lockout feature.

Note: Panels returned to DSC with the Installer's Lockout feature enabled and no other apparent problems will be subject to an additional service charge.

JUST FOR THE RECORD

Customer _____

Address _____

_____

Phone _____ **Installation Date** _____

Contact:

#1 Name _____ Phone _____

#2 Name _____ Phone _____

#3 Name _____ Phone _____

Control _____ **Version #** _____ **Account #** _____

Receiver Number _____ **Installer's Code** _____

	Zone Type	**Protected Area**
1	_____	_____
2	_____	_____
3	_____	_____
4	_____	_____
5	_____	_____
6	_____	_____
7	_____	_____
8	_____	_____
9	_____	_____
10	_____	_____
11	_____	_____
12	_____	_____
13	_____	_____
14	_____	_____
15	_____	_____
16	_____	_____

Fire Zone _____

Entry Time _____ **Exit Time** _____ **Bell Cut-off** _____

Keypad Zones

- [F] Key On/Off ⌊____⌋
- [A] Key On/Off ⌊____⌋
- [P] Key On/Off ⌊____⌋

Quick Arm On/Off ⌊____⌋ **Quick Exit** On/Off ⌊____⌋ **Installer's Lock Out** On/Off ⌊____⌋

Installer's Name _____

Note: In sections [01] through [15], do not enter any data in sections that are not used.

[01] 1st Phone Number Page 14

|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|

- Be sure to enter [#] to end number
- Enter [0] for digit "0" in phone number

[02] 1st Account Code Page 15

|_|_|_|_|

- For 3 digit code enter [0] for last digit
- Enter [Q 1 Q] (HEX A) for digit "0" in account code i.e. Account code 103 would be [1]+[Q 1 Q]+[3]+[0].

[03] 2nd Phone Number Page 15

|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|

[04] 2nd Account Code Page 15

|_|_|_|_|

[05] Alarm Reporting Codes Zones 1 to 8 Page 15

|_|_| **Zone 1 Alarm** |_|_| **Zone 5 Alarm**
|_|_| **Zone 2 Alarm** |_|_| **Zone 6 Alarm**
|_|_| **Zone 3 Alarm** |_|_| **Zone 7 Alarm**
|_|_| **Zone 4 Alarm** |_|_| **Zone 8 Alarm**

- For single digit reporting codes, enter [0] as 2nd digit
- Enter [Q1Q] (HEX A) to transmit a "0". (A "0" digit is 10 pulses.)

[06] Alarm Reporting Codes Zones 9 to 16 Page 15

|_|_| **Zone 9 Alarm** |_|_| **Zone 13 Alarm**
|_|_| **Zone 10 Alarm** |_|_| **Zone 14 Alarm**
|_|_| **Zone 11 Alarm** |_|_| **Zone 15 Alarm**
|_|_| **Zone 12 Alarm** |_|_| **Zone 16 Alarm**

[07] Restoral Reporting Codes Zones 1 to 8 Page 15

|_|_| **Zone 1 Restoral** |_|_| **Zone 5 Restoral**
|_|_| **Zone 2 Restoral** |_|_| **Zone 6 Restoral**
|_|_| **Zone 3 Restoral** |_|_| **Zone 7 Restoral**
|_|_| **Zone 4 Restoral** |_|_| **Zone 8 Restoral**

[08] Restoral Reporting Codes Zones 9 to 16 Page 16

|_|_| **Zone 9 Restoral** |_|_| **Zone 13 Restoral**
|_|_| **Zone 10 Restoral** |_|_| **Zone 14 Restoral**
|_|_| **Zone 11 Restoral** |_|_| **Zone 15 Restoral**
|_|_| **Zone 12 Restoral** |_|_| **Zone 16 Restoral**

[09] Utility Alarm Reporting Codes Page 16

|__|__| **Fire Zone***
|__|__| **Auxiliary Input Zone* or *****
|__|__| **Battery Trouble****
|__|__| **AC Failure Trouble****
|__|__| **Day Zone(s) Trouble****
|__|__| **Bell Circuit Trouble****
|__|__| **Fire Zone Trouble****
|__|__| **Auxiliary Power Supply Trouble****

* Priority alarms/restorals
** Maintenance alarms/restorals see section [33]
*** Transmission reports with sections [11] to [14] (openings/closings)

Note: For UL installations, either AC failure or battery trouble reporting must be enabled.

[10] Utility Restoral Reporting Codes Page 16

|__|__| **Fire Zone***
|__|__| **Auxiliary Input Zone* or *****
|__|__| **Battery Trouble****
|__|__| **AC Failure Trouble****
|__|__| **Day Zone(s) Trouble****
|__|__| **Bell Circuit Trouble****
|__|__| **Fire Zone Trouble****
|__|__| **Auxiliary Power Supply Trouble****

* Priority alarms/restorals
** Maintenance alarms/restorals see section [33]
*** Transmission reports with sections [11] to [14] (openings/closings)

[11] Reporting Codes for Closing (Arming) via Access Codes 1 to 8 Page 16

|__|__| **Access Code 1**
|__|__| **Access Code 2**
|__|__| **Access Code 3**
|__|__| **Access Code 4**
|__|__| **Access Code 5**
|__|__| **Access Code 6**
|__|__| **Access Code 7**
|__|__| **Access Code 8**

[12] Reporting Codes for Closing (Arming) via Access Codes 9 to 16 Page 16

|__|__| **Access Code 9**
|__|__| **Access Code 10**
|__|__| **Access Code 11**
|__|__| **Access Code 12**
|__|__| **Access Code 13**
|__|__| **Access Code 14**
|__|__| **Access Code 15**
|__|__| **Access Code 16**

[13] Reporting Codes for Opening (Disarming) via Access Codes 1 to 8 Page 16

|__|__| **Access Code 1**
|__|__| **Access Code 2**
|__|__| **Access Code 3**
|__|__| **Access Code 4**
|__|__| **Access Code 5**
|__|__| **Access Code 6**
|__|__| **Access Code 7**
|__|__| **Access Code 8**

[14] Reporting Codes for Opening (Disarming) via Access Codes 9 to 16 Page 16

|__|__| **Access Code 9**
|__|__| **Access Code 10**
|__|__| **Access Code 11**
|__|__| **Access Code 12**
|__|__| **Access Code 13**
|__|__| **Access Code 14**
|__|__| **Access Code 15**
|__|__| **Access Code 16**

[15] Reporting Codes for Miscellaneous Functions Page 17

|__|__| **Partial Closing*****
|__|__| **Keypad Panic Alarm [P]***
|__|__| **Keypad Fire Alarm [F]***
|__|__| **Keypad Auxiliary Alarm [A]***
|__|__| **Keypad Panic Restoral [P]***
|__|__| **Keypad Fire Restoral [F]***
|__|__| **Keypad Auxiliary Restoral [A]***
|__|__| **Periodic Test Transmission****

* Priority alarms/restorals

** Maintenance alarms/restorals see section [33]

*** Transmission reports with sections [11] to [14] (openings/closings)

[16] Zone Definitions for Zones 1 to 8 Page 17

Note: When defining zones, ASSIGN DELAY ZONES FIRST to zones 1, 2, 3....then assign the other types to the remaining zones in any order desired.

Default			1st Digit	2nd Digit
0	0	Zone 1	0 = Slow, audible	0 = Delay
0	1	Zone 2	* 1 = Slow, silent	1 = Instant
0	1	Zone 3	2 = Fast, audible	2 = Interior
0	1	Zone 4	* 3 = Fast, silent	3 = Interior...Home-Away
0	1	Zone 5	The maximum delays allowed for UL installations are: Entry delay = 45 seconds Exit delay = 60 seconds.	4 = 24 hr...Bell
0	1	Zone 6		5 = 24 hr...Bell/Buzzer
0	1	Zone 7		* 6 = 24 hr...Buzzer
0	1	Zone 8	* Not allowed for UL local installations.	7 = Double delay
				8 = 4x Delay
				9 = Day
				A = Delay...Home-Away

[17] Zone Definitions for Zones 9 to 16 Page 18

Note: Zones 9-16 cannot be programmed for fast response - Do not use fast response devices on these zones. e.g. Vibration detectors.

Default		1st Digit	2nd Digit
0 1	Zone 9	0 = Slow, audible	0 = Delay
0 1	Zone 10	* 1 = Slow, silent	1 = Instant
0 1	Zone 11	The maximum delays allowed for UL installations are: Entry delay = 45 seconds Exit delay = 60 seconds.	2 = Interior
0 1	Zone 12		3 = Interior...Home-Away
0 1	Zone 13		4 = 24 hr...Bell
0 1	Zone 14		5 = 24 hr...Bell/Buzzer
0 1	Zone 15	* Not allowed for UL local installations.	* 6 = 24 hr...Buzzer
0 1	Zone 16	***Note: Zones 9 to 16 cannot be programmed for fast response. Do not use fast response devices) e.g. vibration detectors) on these zones.***	7 = Double delay
			8 = 4x Delay
			9 = Day
			A = Delay...Home-Away

[18] 1st System Option Code Page 18

Default			Zone Light On	Zone Light Off
Off	Zone Light	1	Communication disabled	Communication enabled
Off	Zone Light	2	Restorals on bell timeout	Restorals on disarming
Off	Zone Light	3	Alarm display while armed	No alarm display/armed
Off	Zone Light	4	DTMF dialing	Pulse dialing
Off	Zone Light	5	N/C zones	EOL resistors zones
Off	Zone Light	6	Keypad [P]anic audible	Silent
On	Zone Light	7	Call 1st phone only	Back up to 2nd phone
Off	Zone Light	8	16th code = One-time use code	Normal code

[19] 2nd System Option Code Page 18

Default			Zone Light On	Zone Light Off
Off	Zone Light	1	Bell pulses always	Bell pulses upon fire only
Off	Zone Light	2	Master Code not changeable	Master Code changeable
Off	Zone Light	3	Bell squawk enabled	Bell squawk disabled
Off	Zone Light	4	Mode 1 operation	Mode 2 operation
Off	Zone Light	5	TLM trouble only	TLM audible when armed
Off	Zone Light	6	1400Hz Radionics	2300Hz Radionics
Off	Zone Light	7	TLM disabled	TLM enabled
Off	Zone Light	8	Access code req'd for bypass	Access code not req'd

[20] Zones 1 to 8 Bypass Mask Page 18

Default

On		Zone Light 1
On		Zone Light 2
On		Zone Light 3
On		Zone Light 4
On		Zone Light 5
On		Zone Light 6
On		Zone Light 7
On		Zone Light 8

Note:

If zone light is on, the zone can be bypassed using the [Q] [1] command.

[21] Zones 9 to 16 Bypass Mask Page 18

Default

On		Zone Light 1
On		Zone Light 2
On		Zone Light 3
On		Zone Light 4
On		Zone Light 5
On		Zone Light 6
On		Zone Light 7
On		Zone Light 8

Note:

If zone light is on, the zone can be bypassed using the [Q] [1] command.

[22] System Times Page 19

Default

3 0		Entry Delay Time (in seconds)
4 5		Exit Delay Time (in seconds)
0 4		Bell Cut-off Time (in minutes)
3 0		AC Failure Transmission Delay (in minutes)
5 0		Normal Zone Response Time (x 10 ms)
3 0		Test Transmission Cycle Time (in days)

Notes:

1. Valid entries are: 01 to 99.
2. Do not enter "00" - it is not a valid entry.

[23] System Clock Times Page 19

Default

9 9 9 9		Automatic Arming Time of Day
9 9 9 9		Test Transmission Time of Day

Enter 4 digits: 00 to 23 hr, 00 to 59 min.

If not used, leave at the factory default settings.

[24] New Installer's Code Page 19

Default

3	0	0	0				

Enter 4 digits from 0 to 9.
Do not enter [Q] or [#].

[25] New Master Code (Access Code Number 1) Page 19

Default

1	2	3	4				

Enter 4 digits from 0 to 9.
Do not enter [Q] or [#].

[26] Downloading Access Code Page 19

Default

3	0	3	0				

Enter 4 digits from 0 to 9.
Do not enter [Q] or [#].

[27] Communicator Format Options Page 19

Default

1		**1st Telephone Number**
1		**2nd Telephone Number**

If only using first telephone number, enter same digit into 2nd phone number.

Enter one HEX digit from [0] to [D] from list for each phone number from list:

[0] Silent Knight/Ademco slow, 10 BPS (1400 Hz handshake) 3/1 and 4/1, 4/2 non extended format

[1] Sescoa, Franklin, DCI, Vertex, 20 BPS (2300 Hz handshake) 3/1 and 4/1, 4/2 non extended format

[2] Silent Knight fast, 20 BPS (1400 Hz handshake) 3/1 and 4/1, 4/2 non extended format

[3] Radionics, (2300/1400 Hz* handshake) 3/1 and 4/2 non extended format

[4] Radionics, (2300/1400 Hz* handshake) 3/1 and 4/2 non extended with parity format

[5] Sescoa super speed

[6] Not used

[7] Not used

[8] Silent Knight/Ademco slow, 10 BPS (1400 Hz handshake) 3/1 extended format

[9] Sescoa, Franklin, DCI, Vertex, 20 BPS (2300 Hz handshake) 3/1 extended format

[A] Silent Knight fast, 20 BPS (1400 Hz handshake) 3/1 extended format

[B] Radionics, (2300/1400 Hz* handshake) 3/1 extended format

[C] Radionics, (2300/1400 Hz* handshake) 3/1 extended with parity format

[D] Sescoa super speed (with identified openings/closings)

[E] Not used

[F] Not used

*See section [19] for Radionics Handshake Option

Note: Do not use option [5] or [D] for LINKS2000 transmissions.

[28] Programmable Input Options Page 20

Default

| 2 | 2 | | | **Auxiliary Input Zone** (Normally open, momentary closure to "Aux +")

Note: This section must be a 2 digit entry.

Select option from below:
[12] Silent 24hr input
[22] Audible 24hr input
[32] Momentary key arming
[42] Forced answer

Note: Section [29]...[33] are used for split arming or split reporting only.

[29] Zone Group A Assignment Page 21

Default

| On | | **Zone Light 1**
| On | | **Zone Light 2**
| On | | **Zone Light 3**
| On | | **Zone Light 4**
| On | | **Zone Light 5**
| On | | **Zone Light 6**
| On | | **Zone Light 7**
| On | | **Zone Light 8**

Note: If zone light is on that zone is assigned to Group A.

Zones 9 to 16 are permanently assigned to Group A.

[30] Zone Group B Assignment Page 21

Default

| On | | **Zone Light 1**
| On | | **Zone Light 2**
| On | | **Zone Light 3**
| On | | **Zone Light 4**
| On | | **Zone Light 5**
| On | | **Zone Light 6**
| On | | **Zone Light 7**
| On | | **Zone Light 8**

Note: If zone light is on, that zone is assigned to Group B.

If light is on in both sections, the zone is common to both sides and will only be armed if both sides are armed.

[31] Access Code Group A Assignment Page 21

Default

| On | | **Zone Light 1**
| On | | **Zone Light 2**
| On | | **Zone Light 3**
| On | | **Zone Light 4**
| On | | **Zone Light 5**
| On | | **Zone Light 6**
| On | | **Zone Light 7**
| On | | **Zone Light 8**

Note: If zone light is on, that access code is assigned to Group A.

Codes 9 to 16 are permanently assigned to Group A.

[32] Access Code Group B Assignment Page 21

Default

On		Zone Light 1
On		Zone Light 2
On		Zone Light 3
On		Zone Light 4
On		Zone Light 5
On		Zone Light 6
On		Zone Light 7
On		Zone Light 8

Note: If zone light is on, that access code is assigned to Group B.

If light is on in both sections, the code is common to both sides and will arm or disarm the entire system.

[33] Call Direction Options Page 21

Default

1		Zones Group A Alarms and Restorals
1		Zones Group B Alarms and Restorals
1		Access Codes Group A Openings and Closings
1		Access Codes Group B Openings and Closings
1		Priority Alarms and Restorals
1		Maintenance Alarms and Restorals

Enter:

[0] No transmissions for this group

[1] Call 1st phone number back up to 2nd (becomes 1st number only, when section [18] item [7] is on)

[2] Call 2nd phone number only

[3] Always call both phone numbers

Note: LINKS2000 transmissions will be made for events programmed for 1st phone number (option [1]) or both phone numbers (option [3]). Reporting code groups programmed with option [0] or option [2] will not be sent with LINKS2000 LRR connection.

[34] Software Reset EEPROM Memory to Factory Defaults Page 21

[35] Through [42] Reserved for Future Use

[43] Access Bypass Mask (Codes 1 to 8) Page 22

Default

On		Zone Light 1
On		Zone Light 2
On		Zone Light 3
On		Zone Light 4
On		Zone Light 5
On		Zone Light 6
On		Zone Light 7
On		Zone Light 8

Note: If zone light is on that code can be used to bypass.

If an access code is not required to bypass zones, this section is irrelevant.

[44] Access Bypass Mask (Codes 9 to 16) Page 22

Default

On		Zone Light 1
On		Zone Light 2
On		Zone Light 3
On		Zone Light 4
On		Zone Light 5
On		Zone Light 6
On		Zone Light 7
On		Zone Light 8

Note: If zone light is on that code can be used to bypass.

If an access code is not required to bypass zones, this section is irrelevant.

[45] Miscellaneous Function Reporting Codes Page 22

	System Test Code
	Auto-arm Abort Code
	Opening After Alarm Code
	TLM Alarm Code
	TLM Restore Code

Entering a valid reporting code will enable this feature.

A “00” or hex “FF” will disable the feature.

Note: Do not enter 8F as System Test Code.

[46] Downloading Computer Telephone Number Page 22

This telephone number is used by the panel to call the downloading computer at the downloading computer's request for access or during a user initiated call up.

Enter [0] for digit '0' in the phone number.

[47] Modem Configuration Page 22

This section is used to set up the panel for downloading functions. The following table shows the On/Off patterns of zone lights 1 through 4 which are used to set the Number of Rings before the panel will answer a call from the downloading computer. The default setting is 12.

	Number of Rings											Default
	1	2	3	4	5	6	7	8	9	10	11	12
Zone Light 1	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off
Zone Light 2	Off	On	On	Off	Off	On	On	Off	Off	On	On	Off
Zone Light 3	Off	Off	Off	On	On	On	On	Off	Off	Off	Off	On
Zone Light 4	Off	Off	Off	Off	Off	Off	Off	On	On	On	On	On

Default			Zone Light On	Zone Light Off
Off	⌊____⌋	Zone Light 1	Set light patterns for number of rings as described in the above table.	
Off	⌊____⌋	Zone Light 2	Minimum number = 1	
On	⌊____⌋	Zone Light 3	Maximum number = 15 (all lights on)	
On	⌊____⌋	Zone Light 4	At least one light must be on.	
Off	⌊____⌋	Zone Light 5	**Downloading answer enabled**	**Downloading answer disabled**
Off	⌊____⌋	Zone Light 6	**User initiated call up**	**No user initiated call up**
Off	⌊____⌋	Zone Light 7	**Answering machine over-ride enabled**	**Answering machine over-ride disabled**
Off	⌊____⌋	Zone Light 8	**Call back enabled**	**Call back disabled**

[48] Panel Identification Code Page 22

Default: **5 0 5 0** ⌊____⌋ Enter 4 digits from 0 to 9. DO NOT ENTER [Q] OR [#].

[49] Periodic Function Enable/Disable Page 22

Default			Zone Light On	Zone Light Off
Off	⌊____⌋	Zone Light 1	**For future use**	**For future use**
Off	⌊____⌋	Zone Light 2	**For future use**	**For future use**
Off	⌊____⌋	Zone Light 3	**For future use**	**For future use**
On	⌊____⌋	Zone Light 4	**For future use**	**For future use**
Off	⌊____⌋	Zone Light 5	**For future use**	**For future use**
Off	⌊____⌋	Zone Light 6	**For future use**	**For future use**
Off	⌊____⌋	Zone Light 7	**For future use**	**For future use**
Off	⌊____⌋	Zone Light 8	**Periodic download enabled**	**Test transmission enabled**

[51] 3rd System Option Code Page 22

Default		Zone Light On	Zone Light Off
On		Zone Light 1 ..... Auto-arm - no bell squawk	Auto-arm - bell squawk
Off		Zone Light 2 ..... Code needed to abort auto-arm	Any key to abort auto-arm
Off		Zone Light 3 ..... 2 minute timeout on keypad	No 2 minute timeout
Off		Zone Light 4 ..... Keypad panic buzzer silent	Keypad panic buzzer audible
Off		Zone Light 5 ..... Keypad fire key disabled	Keypad fire key enabled
Off		Zone Light 6 ..... Quick exit enabled	Quick exit disabled
Off		Zone Light 7 ..... Answering machine over-ride timer is 120 seconds	Answering machine over-ride timer is 60 seconds
Off		Zone Light 8 ..... Bell shutdown active	Bell shutdown not active

[52] Delay Before Transmission Page 23

Default

0 0	= No delay		Only burglary zones are delayed. All 24 hour and fire zones transmit immediately. If panel is disarmed before delay time, no transmission is sent. Valid entries are: 00 to 99 (in seconds).

[53] Long Range Radio Account Code Page 23

Enter a 4-digit code using the numbers 0 through 9 and A through F. For zero, enter [0].

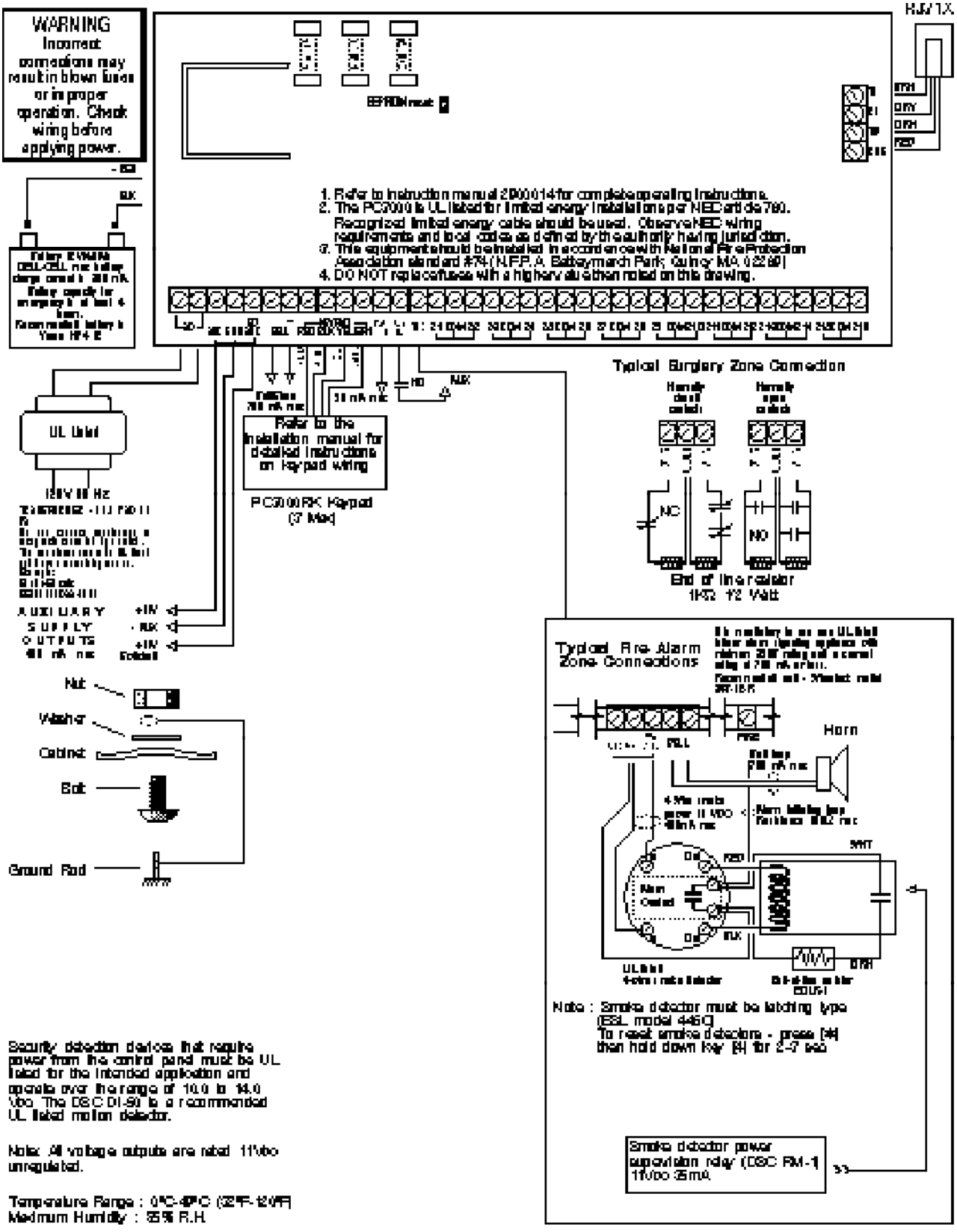
	Note: In this programming section ONLY, enter [0] if a zero is used in the account code. Entering [Q][1][Q] will place an "A" in the account code.

[54] Long Range Radio Installer's Test Mode Page 23

[90] Installer's Lockout Enable Page 23

[91] Installer's Lockout Disable Page 23

HOOKUP DIAGRAMS


WARNING
Incorrect connections may result in blown fuses or improper operation. Check wiring before applying power.
RJ-31X
1. Refer to instruction manual 29000114 for complete operating instructions.
2. The PC2000 is UL listed for limited energy installations per NEC article 760.
Recognized limited energy cable should be used. Observe NEC wiring requirements and local codes as defined by the authority having jurisdiction.
3. This equipment should be installed in accordance with National Fire Protection Association standard #74 (N.F.P.A. Batterymarch Park, Quincy MA 02269)
4. DO NOT replace confuses with a higher value than noted on this drawing.
UL Listed
120V 60 Hz
Refer to the installation manual for detailed instructions on keypad wiring
PC2000RK Keypad
(7 Max)
Typical Burglary Zone Connection
Normally closed contact
Normally open contact
NC
NO
End of line resistor
1KΩ 1/2 Watt
AUXILIARY POWER SUPPLY
OUTPUTS
Nut
Washer
Cabinet
Bolt
Ground Rod
Typical Fire Alarm Zone Connections
Horn
Main Control
ULtrA
Smoke detector power supervision relay (DSC PM-1) 11Vdc 25mA
Note : Smoke detector must be latching type (ESL model 445C)
To reset smoke detectors - press [#] then hold down key [8] for 2-3 sec.
Security detection devices that require power from the control panel must be UL listed for the intended application and operate over the range of 10.0 to 14.0 Vdc. The DSC DI-90 is a recommended UL listed motion detector.
Note: All voltage outputs are rated 11Vdc unregulated.
Temperature Range : 0°C-49°C (32°F-120°F)
Maximum Humidity : 85% R.H.

KEYPAD AND FIRE CIRCUIT HOOK-UP DIAGRAMS

KEYPAD HOOKUP

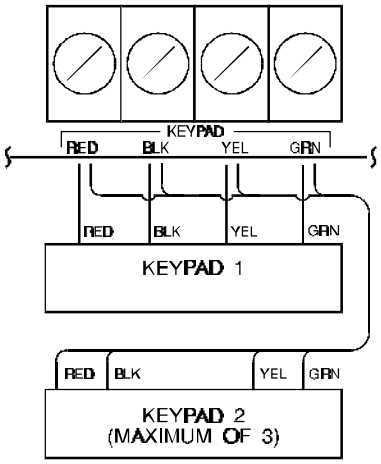
1 Each keypad has four coloured leads: red (RED), black (BLK), yellow (YEL), and green (GRN). Connect the leads to the corresponding terminals on the panel.

2 Up to 3 keypads may be connected in parallel. DO NOT connect multiple keypads on the same loop.

3 The wiring table gives the maximum wire run for various gauges of wire. Wire run lenghts are calculated on the maximum current drawn by the keypad (when all lights are ON).

4 For standby loading purposes, it is recommended that a current draw of 20 mA per keypad be used. This represents the panel in a disarmed state with two zones in alarm.

NOTE: If two wires of the same gauge are paralleled, the run length can be doubled. e.g.: If eight 22AWG wires (2 RED, 2 BLK, 2 YEL, 2 GRN) are run to the keypad, the run length would double from 540 feet (164.5 m) to 1080 feet (329 m).

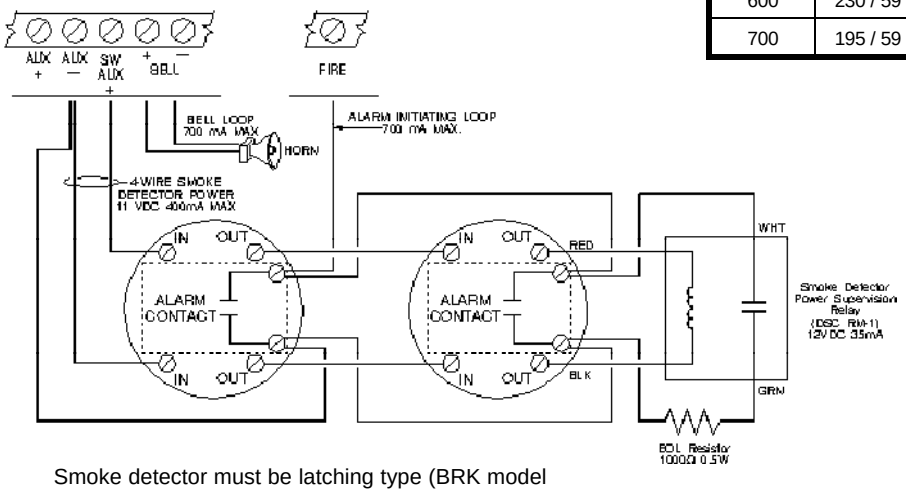


PC3000RK Wiring Chart	
Wire Gauge	Maximum Run Length Keypad to Panel
24AWG	330' / 100m
22AWG	540' / 164m
20AWG	850' / 259m
19AWG	1000' /305m
18AWG	1360' /414m

FIRE CIRCUIT HOOKUP

Smoke Detector Power Loop Wiring Chart					
Loop Current mA	AWG14	AWG16	AWG18	AWG19	AWG22
	Maximum wire run to EOL relay in feet / meters				
50	2750 / 838	1740 / 530	1090 / 332	869 / 264	433 / 131
100	1375 / 419	870 / 265	545 / 166	434 / 132	216 / 66
200	690 / 210	435 / 132	270 / 82	217 / 66	108 / 33
300	460 / 140	290 / 88	180 / 55	144 / 43	144 / 43
400	345 / 105	215 / 65	135 / 41	108 / 33	54 / 16

Bell Loop Wiring Chart					
Bell Current mA	AWG14	AWG16	AWG18	AWG19	AWG22
	Maximum wire run to EOL resistor in feet / meters				
50	2750 / 838	1740 / 530	1090 / 332	869 / 264	433 / 131
100	1375 / 419	870 / 265	545 / 166	434 / 132	216 / 66
200	690 / 210	435 / 132	270 / 82	217 / 66	108 / 33
300	460 / 140	290 / 88	180 / 55	144 / 43	144 / 43
400	345 / 105	215 / 65	135 / 41	108 / 33	54 / 16
500	275 / 83	170 / 52	105 / 32	86 / 26	43 / 13
600	230 / 59	140 / 43	90 / 27	72 / 22	36 / 11
700	195 / 59	125 / 38	80 / 24	62 / 19	30 / 9



Smoke detector must be latching type (BRK model 1812). To reset smoke detectors, press and hold [∗][4].

Alarm Initiating Loop Wiring Chart	
Wire Gauge	Max. Run to EOL Resistor
14AWG	15500' / 4724m
16AWG	9740' / 2968m
18AWG	6120' / 1865m
19AWG	4860' / 1481m
20AWG	3840' / 1170m
21AWG	3060' / 932m
22AWG	2420' / 737

LIMITED WARRANTY

Digital Security Controls Ltd. warrants that for a period of twelve months from the date of purchase, the product shall be free of defects in materials and workmanship under normal use and that in fulfillment of any breach of such warranty, Digital Security Controls Ltd. shall, at its option, repair or replace the defective equipment upon return of the equipment to its repair depot. This warranty applies only to defects in parts and workmanship and not to damage incurred in shipping or handling, or damage due to causes beyond the control of Digital Security Controls Ltd. such as lightning, excessive voltage, mechanical shock, water damage, or damage arising out of abuse, alteration or improper application of the equipment.

The foregoing warranty shall apply only to the original buyer, and is and shall be in lieu of any and all other warranties, whether expressed or implied and of all other obligations or liabilities on the part of Digital Security Controls Ltd. This warranty contains the entire warranty. Digital Security Controls Ltd. neither assumes, nor authorizes any other person purporting to act on its behalf to modify or to change this warranty, nor to assume for it any other warranty or liability concerning this product.

In no event shall Digital Security Controls Ltd. be liable for any direct, indirect or consequential damages, loss of anticipated profits, loss of time or any other losses incurred by the buyer in connection with the purchase, installation or operation or failure of this product.

Warning: Digital Security Controls Ltd. recommends that the entire system be completely tested on a regular basis. However, despite frequent testing, and due to, but not limited to, criminal tampering or electrical disruption, it is possible for this product to fail to perform as expected.

Security Products

PC3000
Notice of Software Release

The PC3000 Software Version 7.6W is designed especially for use with the LINKS2000 Long Range Radio Transmitter.

The LINKS2000 Long Range Radio Transmitter allows alarms and other events to be reported through a radio network operated by the monitoring station. The LINKS2000 itself requires no programming. Refer to the Programming Work Sheets in this manual and review the new programming items added to support the LINKS2000.

NOTE: The PC3000 v7.6W Software does not support downloading functions. For both Downloading and Long Range Radio Transmitter functions, use the PC3000 Control Panel with v7.7 Software with the DSC LINKS2150 Long Range Radio Transmitter.

FCC COMPLIANCE STATEMENT

CAUTION: Changes or modifications not expressly approved by Digital Security Controls Ltd. could void your authority to use this equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

The user may find the following booklet prepared by the FCC useful: "How to Identify and Resolve Radio/Television Interference Problems". This booklet is available from the U.S. Government Printing Office, Washington D.C. 20402, Stock # 004-000-00345-4.

IMPORTANT INFORMATION

This equipment complies with Part 68 of the FCC Rules. On the side of this equipment is a label that contains, among other information, the FCC registration number of this equipment.

NOTIFICATION TO TELEPHONE COMPANY Upon request, the customer shall notify the telephone company of the particular line to which the connection will be made, and provide the FCC registration number and the ringer equivalence of the protective circuit.

FCC Registration Number: F534J3-10411-AL-E
Ringer Equivalence Number: 0.0B
USOC Jack: RJ-31X

TELEPHONE CONNECTION REQUIREMENTS Except for the telephone company provided ringers, all connections to the telephone network shall be made through standard plugs and telephone company provided jacks, or equivalent, in such a manner as to allow for easy, immediate disconnection of the terminal equipment. Standard jacks shall be so arranged that, if the plug connected thereto is withdrawn, no interference to the operation of the equipment at the customer's premises which remains connected to the telephone network shall occur by reason of such withdrawal.

INCIDENCE OF HARM Should terminal equipment or protective circuitry cause harm to the telephone network, the telephone company shall, where practicable, notify the customer that temporary disconnection of service may be required; however, where prior notice is not practicable, the telephone company may temporarily discontinue service if such action is deemed reasonable in the circumstances. In the case of such temporary discontinuance, the telephone company shall promptly notify the customer and will be given the opportunity to correct the situation.

ADDITIONAL TELEPHONE COMPANY INFORMATION The security control panel must be properly connected to the telephone line with a USOC RJ-31X telephone jack.

The FCC prohibits customer-provided terminal equipment be connected to party lines or to be used in conjunction with coin telephone service. Inter-connect rules may vary from state to state.

CHANGES IN TELEPHONE COMPANY EQUIPMENT OR FACILITIES The telephone company may make changes in its communications facilities, equipment, operations or procedures, where such actions are reasonably required and proper in its business. Should any such changes render the customer's terminal equipment incompatible with the telephone company facilities the customer shall be given adequate notice to the effect modifications to maintain uninterrupted service.

RINGER EQUIVALENCE NUMBER (REN) The REN is useful to determine the quantity of devices that you may connect to your telephone line and still have all of those devices ring when your telephone number is called. In most, but not all areas, the sum of the RENs of all devices connected to one line should not exceed five (5.0). To be certain of the number of devices that you may connect to your line, you may want to contact your local telephone company.

EQUIPMENT MAINTENANCE FACILITY If you experience trouble with this telephone equipment, please contact the facility indicated below for information on obtaining service or repairs. The telephone company may ask that you disconnect this equipment from the network until the problem has been corrected or until you are sure that the equipment is not malfunctioning.
Digital Security Controls Ltd. 160 Washburn St., Lockport, NY 14094

© 1995 Digital Security Controls Ltd.

1645 Flint Rd., Downsview, Ontario Canada M3J 2J6
Tel: (416) 665-8460 Technical Assistance Line: 1-800-387-3630 Fax: (416) 665-7498